THE NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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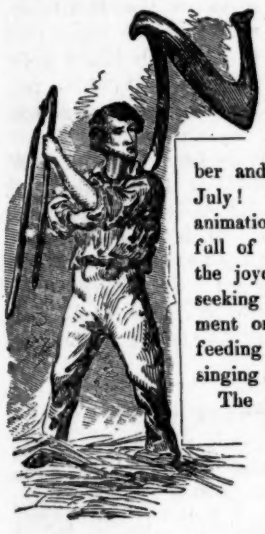
NOVEMBER.

* * * "A cold blue horizon
Darkly encircles checkered fields and farms,
Where late the gold of ripening harvests shone;
But bearded grain and fragrant hay are gone,
And Autumn mourns the loss of Summer's dreams."



NOVEMBER! What a change is presented to the contemplative mind, between November and the month of July! Then, all was animation. The air was full of insect life, and the joyous birds were seeking food and enjoyment on the wing, or feeding their young and singing among the trees. The earth, too, was covered with the rich garniture which a beneficent Providence never forgets to bestow. The farm seemed full to repletion. The fields covered with grain, or grass, the ploughed lands dotted with sprinigng plants, green and fresh and flushed with new life. The little denizens of the air sung anthems of praise to those that dwelt below, and they sent back their song into the sky! What life, and joy, and beauty had sprung up in everything about us.

Is there less in November? To the outward senses, there undoubtedly is. "The last rays of the summer's sun now fall feebly on the earth. The country which so lately bloomed in vernal beauty and blushing charms, is becoming poor, withered and barren." No trees are in blossom; no fields gay with verdure; the leaves of the trees are falling, or are already drifting in the wind along the ground; the pines, the elms, and the oaks bend beneath the blasts of the north wind, and the fields are brown and bare!

The happiness of some persons is considerably diminished by these changes. When deprived of the delights which they receive through the medium of sight, all the wide landscape is deprived of its charms. The earth has lost its verdure, gaiety and beauty; the fields are swampy, and nothing is seen around but a rugged and uneven surface. Gloominess reigns!

Is this night? What will be the effect upon the mind and imagination, if such a train of thought and feeling are indulged in through a lifetime? Are there no compensations for these banished charms? Undoubtedly, there are many, very many, hidden things just as beautiful as the bursting spring or glowing summer, if we would diligently seek to find them. Some are, unquestionably, "past our finding out;" but we are created to seek

knowledge, and God demands it of us just as much as He does the exercise of mercy and charity in our moral life. We have no right to allow the "talent" entrusted to us to lie idle, but should increase it by all proper means within our power, and yield it up at last to the Giver, increased, some fifty and some an hundred fold. How shall we do it. Let us see.

All Nature around us is full of the most gratifying instruction, but it will not unlock itself, unasked, and allow us to look into its hidden mysteries, without thought, attention, investigation, *work*.

Here, for instance, before you, is the grape vine, from which you have been plucking and eating delicious fruit. It has *labored* all summer to produce it, and to afford you shade when conversing with friends. Now it is leafless, and its bare branches are swaying in the northwest wind. What does it propose to do? To mourn over its loss of fragrant blossoms, purple fruit and green leaves, or to use its powers to revive again, and be as useful and beautiful as ever? Look, now, into the axils of the leaves, and see what lies hidden there, close up to the parent stem. How full, plump, even! So smooth, shining, and perfect in form! What can they be? And here they are, everywhere, all up and down the vines! What are they but the promise of another year's blossom and fruit and shade, all compacted within a space no larger than half a pea! Ah, doubting man, take a November lesson from this.

And so with the fruit trees. They have already gathered their energies to be productive another year; have not procrastinated and doubted whether they could do anything or not, but have commenced in season and established the germs for another crop. How wonderful! And this has been going on while fruition was written on every branch, in clustering grapes or other fruits, all over the tree. Then commenced signs of decay; the fruit fell, with falling leaves, but the precious germ of future crops still grew and clothed itself with a case which is proof against all the assaults of weather, rain, hail, frost or snow! How wonderful!

Then the *reproduction* of plants would become a topic of the most gratifying interest to one who would earnestly seek a compensation for the glooms of November. And this is going on all the time. It is quite probable that trees are always active unless when frozen through. They lose no time, but work, work, whenever the power of frost does not bind them in its icy chains.

All have observed the *red snow* which sometimes covers the winter drifts for miles together, so that the view has been *red* instead of the usual white appearance. This is a minute *vegetable*, and perhaps the lowest example of vegetable life. It grows in substance, and has been supposed from its very rapid increase to have fallen from the sky. But it is not so. Each single cell of this *red snow* produces within itself a number of little particles, which are set free by the bursting of the parent cell which encloses them. These gradually enlarge, derive their nourishment from the air and moisture around, and in time acquire full size, and then produce a new family. So the white snow far and near is covered with what we call *red snow*, or more accurately, with a *large crop of vegetables growing on the snow in mid-winter!* How wonderful are the works of Nature! Who can be gloomy while the faculty exists to explore them!

So the lichen, which forms the winter food of the reindeer, grows entirely buried under the snow, and in the greatest abundance, too, as it is their sole support during a large portion of the year.

Finally, the man who has no resources within himself may murmur at these changes; but the philosophic mind contemplates them with satisfaction. The cold, and frost, and snows, bring blessings in disguise. "Whilst the earth has lost its beauty and external charms, it has commenced its labors anew, and is busily employed in secret working for the future good of the creation."

NOVEMBER WORK.

Among some farmers, November is a trying month for the farm stock, and especially so when the late summer feed has been short, and the hay crop is short. In order to save the hay, cattle are kept in the pastures and fields until the grass—if there is any—is dead, frozen in some portions of the day, and nearly destitute of nutrition. The cattle wander over the fields, nibbling the herbage, working hard all day, and come in at night hollow and hungry. In this condition they are not able to

endure the searching winds, and growing poorer and weaker every day.

If you want animals tough and hearty through the winter, feed them well in November, and protect them from cold winds and storms. It is one of the worst things that can befall a young colt or calf to allow it to deteriorate in condition just before winter sets in. The period between grass and fodder is the most trying one for young stock of the entire year.

Banking the House.—Nothing is better than evergreen branches. Lay them a foot in thickness about the underpinning. Tread them down. The first snow that falls will be likely to fill all the space among them. If there is a fall in sufficient quantity, shovel it over the branches two feet deep, and the cellar will be kept from freezing and the whole house be warmer for it. This course is not half the labor that banking with earth is, and not a tenth part so dirty.

Look out for the Sheep.—Provide a warm room for them to pass in and out of as they please. Some farmers furnish a room with such ample light and ventilation that they do not allow them to go out at will. Sheep do not bear confinement well. It is their nature to roam. They do better in small flocks, as, indeed, almost all other animals do. They ought to have convenient racks to feed from, and enough of them to prevent crowding each other when feeding. Feed with roots occasionally; if a small quantity every day, so much the better.

Fattening Animals.—Do not delay this process. Feed often, a little at a time. Keep them warm and quiet. Keep the poultry clean and the young cocks by themselves, &c.

Bushes under Walls.—These are a nuisance in cultivating and harvesting. Clean them out, and do forty other things that demand attention in November, and among which the most important is to

Provide for the Kitchen plenty of dry wood, soft water, and every utensil which will make the work light, and every heart in the house cheerful.

—The city idea of farming is strawberries immersed in Alderney cream, and omelets from fresh eggs, and dews glistening in the morning sun, and waving clover tops, and that sort of thing.

For the New England Farmer.

WINTER MANAGEMENT OF STOCK.

An Essay read before the Concord Farmers' Club, by Mr. ELIJAH WOOD.

It is now the opinion of most people, that no branch of farming compares in importance with the keeping and management of stock, especially in winter. The success of the farmer depends almost entirely upon it, in this latitude. Our farms have become exhausted of certain elements which must be restored by keeping stock, or by purchasing manure; and the latter is certainly out of the question, as experience has taught most of us. No good farmer will sell his hay for a succession of years, without buying its equivalent in some form as a fertilizer. Therefore, stock must be kept and managed so as to be a continual source of income. Many farmers depend solely upon their cows for support, selling very little from the farm but *their* products. The highest success depends on the care and attention they receive, and we all know that cows cannot give much milk without they are supplied liberally with good feed.

It is bad policy to keep too much stock for the amount of fodder on hand. One ton of hay given to one cow will produce more milk in a given time than if fed to two. The manure has more bulk and is better, because two animals have to be supported from it in the place of one; the labor is only half as much, and the capital is also reduced in the same ratio.

I have always found, while raising milk, that November was the hardest month in the year for that purpose, because it is "between hay and grass;" nights cold; days windy and chilly; grass frost-bitten; corn-fodder dry, and generally too much exposure of the cattle. November should properly be called a winter month in the milk business. Cows should be fed extra well then, to make them continue their flow of milk through the winter.

There are certain rules to be followed in order to succeed in any business,—so with successful stock feeding. Barns must be warm and well ventilated. It is not enough to close up tight just about the cows, exposing them to drafts of air when the leanto is opened for feeding, but the whole barn should be of one temperature, above freezing, with ventilators that can be regulated at pleasure. Cows must be well fed. They cannot do well on coarse kinds of fodder, meadow hay, &c., but must be given something fully as nutritious as the best feed in summer. English hay is the basis. Corn fodder, straw, meadow hay, cut and mixed with the different varieties of grain, according to their concentration and value, roots, &c., prepared in some way equivalent to summer food.

In my successful days of milk-raising—days of which there is no reason to find fault,—I studied to find out the most profitable way of keeping milch cows with the material at hand,—

which was often of rather poor qualities of fodder. I used to consider it unprofitable to cut good hay, or anything that the cattle would eat quickly without waste, but always found it advantageous to cut the second qualities—poorer hay and corn butts. Have gone so far as to weigh the entire feed for weeks. I found my cows would eat of long hay twenty-four pounds each, on an average, with four quarts of oil and cob meal, and that *eighteen* pounds of fine cut hay, mixed with the same amount of meal, and moistened with warm water, would satisfy them just as well, and insure full as much milk. I continued the cutting as long as I continued the business, and am a firm believer in it,—and steaming too,—provided the stock is large enough to keep a man employed all the time.

Regularity in feeding is of the greatest importance. Feeding only when you happen to be about the barn makes the cattle restive and never satisfied. I commence in the morning after milking, by giving the cut-feed mixed the night before, then pass them the hay or other fodder until they are full, (let it take a longer or shorter time) or about two hours, if the hay is good,—if poor a longer time; water, and let them remain quiet till noon, going through with the same change again. They most invariably drink well after eating, but if suffered to remain two hours will refuse water. Some farmers hardly ever turn their cows out in winter but water in the barn. The watering *there* I approve, because they will drink more from pails if it is pure and of even temperature, and their vicious neighbors do not disturb them; but in the yard the inferior ones are driven and hooked about, never having any peace. Exercise they need, if only for ten minutes each day, to give them the use of their limbs. I was convinced of the importance of their being moved each or every other day, from trials at another place some ten years since, where there were no conveniences for watering in the barn, but the stock must be turned into the yard, stormy or not. *They* came out in the spring looking much better; in better flesh; hair glossy and smooth; while at the home barn, where they were turned out sometimes once in three days, sometimes once a week, according to the variations in the weather, they did not hold their flesh as well; their exercise when out was too violent, they run and capered, and tore their hair off with their horns, making them look rough and forbidding. Too close confinement in the stable creates an itching or disease of the skin very uncomfortable to the animal, which can be prevented in part by a little airing every day, and vermin do not trouble as badly. If ashes are sifted over stock when they are first confined in the barn in the fall, and thoroughly carded and exercised a little each day, no vermin will trouble of any consequence. Bedding should not be overlooked. Cut meadow hay or straw, or in their absence fine sand, answers a good purpose, and also keeps them from slipping when the floor is smooth, preventing accidents.

I have spoken more particularly of milk cows, but rules are just as applicable to dry and growing stock. Most of us are too neglectful of the last class, turning them off with the waste, and requiring most of the summer's run to grass to recover flesh in winter. I have been keeping from twenty to thirty-two working oxen for the past six winters and feeding upon corn fodder, meadow hay, millet, rowen, poor qualities of English hay, &c. They were such products as do not readily sell. I always looked after the stock myself, and they gained perceptibly, and some of them sold for beef in March. In the morning, at 5 o'clock, all the remains of the previous day's feeding, were cleanly swept from before them—mostly corn butts—and feeding commenced again with husks, three times, *a little at a time;* stalks twice, a bundle to a pair each time, meadow hay, rowen, clover hay once each, in all some eight or nine times; watered at 8 o'clock, and then let them stand, or turned them out if no other work was pressing. At noon they were fed three times on hay, and watered again at 1 or 1½ o'clock. Flint says in his treatise, that an animal will drink four-thirtieths of its weight in water. My twenty oxen, not worked, out of the twenty-six, drank, to-day, before half-past one o'clock,—three of them, seven pails each, or fourteen gallons, twelve pounds to the gallon, 168 pounds; nine, twelve gallons, 144 pounds; six, ten gallons, 120 pounds; and two, six gallons, 72 pounds; in all, 222 gallons—2,664 pounds.

How, or why is it that some farmers can carry their stock through the winter better on meadow hay than others will on English? Is it not the case? It is owing to the nursing, the regularity, the liberality, the judgment! Some farmers always have good cows, and others always poor. It is dangerous to recommend and sell to the last class, because they are always disappointed. You ought to tell them, when they buy, that you do not sell the keeping.

The Club need not be told that it requires very little judgment and skill to feed English hay alone, but much of both to make stock thrive on poor qualities of fodder. In the first case they may be fed in large quantities and at long intervals,—in the other, a little at a time and often, requiring much more time and patience. But the true rule is, to feed *often and a little at a time*, of all kinds of fodder.

—Now is the time to save the leaves and discarded grasses. Do not think they are valueless because so light. There is much substance for the weight, or rather much effect. The reason for this is that they afford a natural food for trees, shrubs and vines. Then gather the harvest of leaves, and imitate nature's wisdom.

For the New England Farmer.

THE GARDEN IN NOVEMBER.

Our notes for this month will necessarily be brief, as but few if any crops remain that will need attention. As long as the ground remains open, however, something can be done to save or forward work in spring. Drains may be laid, wherever necessary. Trenching or subsoiling stiff soils, exposing new surface to the action of the frosts of winter, will tend to ameliorate and enrich such soils, or rather loosen and set free elements already there, ready to be appropriated by succeeding vegetation. Much work indicated for past months may have lapped over into this, and should be attended to. In our New England climate few if any crops will remain to be gathered, yet if such there be they should be harvested at once.

ASPARAGUS.—If not already done, the beds should have a good mulch of coarse manure spread over them. If the ground remains unfrozen, new beds may yet be made and the roots set.

CABBAGE.—Those not gathered should be harvested before any more freezing. It is better to bury in trenches made in dry soil, heads down, covering the heads five or six inches, banking so as to shed water, any left out till now which it is desirable to preserve for spring, as after hard freezing they will keep better thus than if put in the cellar. Cabbage will endure considerable frost without injury; yet there is a limit to all things.

CELERY.—This we suppose is all harvested, but should any remain, it should be transferred into boxes or barrels of earth in the cellar, or be buried out door where it can be got at conveniently, and not freeze hard.

COLD FRAMES.—See directions for their construction and use, in the following article. Put in cabbage, cauliflower, lettuce and such other plants as are to be wintered. Give plenty of air daily, closing in and banking up as the severity of the weather increases.

MANURE.—Increase the compost heap by adding muck, sods, manure, slops and every thing that will help increase the store of plant food, as it will all be needed. Do not throw away any bones, but preserve and gather old bones, breaking them in pieces and pack them down in a close barrel, with good wood ashes, covering them well with the ashes, and keep them soaked with urine and slops from the chamber, and next spring the bones will crumble and may be mixed with the ashes, and you will have an excellent phosphate which will require care in using. Such is the practical observation and experience of the writer.

PARSNIPS AND SALSIFY.—Leave the main crop in the ground through the winter, as frosts improve their quality. A few may be dug and buried in the cellar, if desirable, for winter use.

Prune, lay down, and protect grape vines and all other plants, shrubs, &c., needing winter protection. Gather in, under cover, all poles, stakes, frames, wooden appliances and implements, and see that they are well preserved. A little care will be well repaid in their prolonged durability.

W. H. WHITE.

South Windsor, Conn., 1869.

For the New England Farmer.

COLD FRAMES.

Their Construction and Use.

Having received letters of inquiry concerning wintering cabbage plants for early spring planting, from some of the readers of the FARMER, to save correspondence, I propose to answer the same through its columns.

A cold frame is merely a box of boards set on the ground, banked up well all around, and covered with hot-bed sash, or sometimes with board shutters. Take two boards of equal length, corresponding to the amount of sash proposed to be used,—the back one a foot wide, and the front eight inches; set posts at the corners and nail to them; cut end pieces to match of length corresponding to width of sash,—say about three feet,—these are made fast. We now have a frame somewhat similar to a hot-bed frame, when we have put on cleats for the sash to rest on. Dig and make fine and mellow a bed in good, generously rich soil, sheltered from north and northwest winds, and place your frame on, facing the south or southeast. No manure is used for heating, as with the hot-bed, all the heat being received from the sun. The frame is banked all around securely with earth on the outside. Such frames are used for protecting cabbage plants, cauliflowers, lettuce, &c., in the kitchen garden, as well as for wintering pansies, carnations, roses and other half-hardy plants, where the advantages of a green house are not had.

To obtain cabbage and cauliflower plants for wintering, the seed should be sown in well prepared beds, in the open ground, with good protection from cold winds, &c., the last of September, in the Northeastern States. On the approach of cold weather they will have attained a growth of about two inches, when they should be transplanted into the cold bed, at a distance of two to three inches apart. The plants are almost hardy, and will stand considerable freezing without injury; yet they require a certain amount of care in cold weather, as well as during clear pleasant days of winter. During the coldest weather they will need to have the sash covered with mats or board shutters, or both; and on mild days and even in clear days when the thermometer indicates 18° or 20° in the shade, they should have abundant air, by hoisting or taking the sash off entirely. The more this hardening process is attended to, the less danger there

is of injury to the plants by sudden or extreme changes. Lettuce is kept in these frames with the same treatment, and transplanted into another frame early in March or April, and covered with glass. These extra beds are kept from hard freezing by deep covering with leaves, &c., during winter, and some days before the plants are put in, the sashes are put on to warm up the soil, after having it dug over, &c.

Plants of cabbage and cauliflower wintered in this way, make hardy ones, which may be transplanted into the open ground much earlier than they can be obtained in any other way and endure the season. W. H. WHITE.

So. Windsor, Conn., Sept. 27, 1869.

For the New England Farmer.

IMPROVEMENT OF A NEGLECTED FARM.

On publishing in the FARMER of July 31, some account of my farm and of its increased productions, which had necessitated the enlargement of the barns, the editor asks, "How did you set that ball in motion? How did you get the manure to start with?"

In reply, I would say, that in the first place I began by raking up all the waste straw, orts, cornstalk butts, weeds, and litter about the yards, scraped out all the holes and corners where manure or any thing to make manure of could be found. I then commenced a pile in the yard, by first a layer of manure, then one of straw, stalks, chip manure, leaves, weeds, or any thing of the kind I could collect, adding a little lime, plaster and salt. In this way I made as large a pile as I could, adding thereto all through the month of April every substance that I could collect of any manurial value.

By planting time I had compost sufficient, with two barrels of Bradley's superphosphate of lime, which I purchased, to dress four or five acres that I planted with corn and potatoes, both of which were good crops. Both the corn and the potatoes were planted on green sward turned over that spring. All that was ploughed the year before was seeded down with clover. As much stock was put upon the place as all the hay and grain it produced would keep, and a little was bought besides for feeding purposes.

The next spring—the present season—this corn and potato ground was also seeded down, on which, with other land seeded last spring, I sowed one hundred and twenty-five pounds of clover and two bushels of herds grass, seed.

Our grain crops for this season are all harvested and threshed. We had eighty bushels of wheat, seventeen of rye, two hundred of oats. We have some eight acres of corn that we shall commence to cut up to-day, and when we get the fodder in the barns we shall not have any spare room. We have sowed some ten bushels of winter wheat, and shall sow some more this week. Our potatoes are very good, and the corn looks very well for this year,—think it will be a fair crop. Our plums were good this year. We gathered several bushels last week that were very nice. Our pears are also good, and there will be some fifty bushels. We shall not have quite as many apples as last year, but there will be several hundred bushels, and they are nice and large. Our grapes are looking well; and if the frost holds off ten days longer, we shall have some as nice peaches as any man need eat.

Feeding Meadows.

Now a word in regard to feeding mow fields in the spring and fall. I believe it is cheaper to keep stock in the barn in the spring than in the mow field, and I don't believe that fall feeding the mow fields is generally advisable. To feed as some farmers do, perhaps a little fall feeding where there is a large growth would not injure the field, but to turn in soon after the hay is cut and keep the field gnawed down by cattle, sheep and horses, I think is a great damage. Some farmers will run an extra fence across their mowing field, so that they can get their cattle and sheep in before the corn is suitable to cut up, to save a few spears of grass that the frost might kill. I think it bad policy to have mow fields fed down so to leave the roots naked.

Time and Manner of Seeding Land.

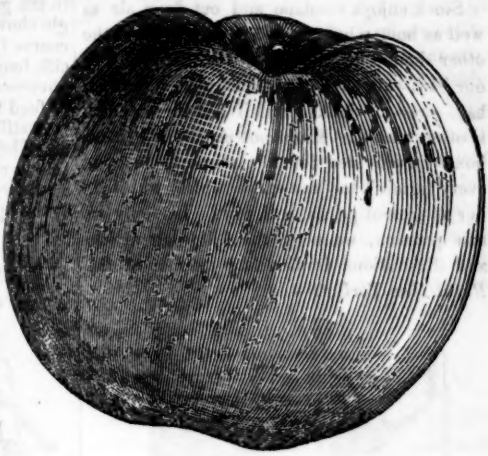
There has been considerable said in your paper about sowing grass seed, particularly as to the time when sown on winter grain. I sowed mine last April, just after the old snow had left and immediately before a rain storm. Some waited till May, and put the harrow on and gave it a good harrowing. I should be glad to hear from those that tried this experiment, as to its effect on the wheat. I got a good stock on mine. But I would be glad to know if harrowing up a field of wheat does it good. AMOS FRENCH.

Hartford, Vt., Sept. 13, 1869.

TO CUT OFF THE NECK OF A BOTTLE.—With a strong twine a yard or less in length, make one turn around the neck, rapidly move the bottle from one end of the string to the other, that the friction may heat the part; while hot, dip in cold water and the glass is cracked off as clean and smooth as if cut by a diamond. A few strokes or movements with the string are all that is required. A bottle may be cut in two by the same process, if strips of paper are pasted around it, to keep the string from slipping from the place desired.—*Rural New Yorker.*

☞ Wheat raising is rapidly on the increase west of the Mississippi, while east of that river it remains stationary, notwithstanding the increase of population and use of labor-saving machines.

THE CAMPBELL APPLE.



There are many Ohio apples sold in the Boston Market and eaten by New England people. The above illustration of one of the choice seedlings of that State is copied from the *Rural New Yorker*. It was an accidental seedling that sprung up about fifteen years ago close to the wall of a brick house occupied by George W. Campbell, Esq., of Delaware, Ohio. The tree is a vigorous, strong grower; habit open, spreading; limbs not crowded; shoots stout, rather blunt; foliage abundant, leaves rather large. It has borne a good crop regularly every year since it commenced bearing. Fruit quite uniform; size from medium to large, and hangs very finely to the tree. It is evidently a late keeper, but heretofore they have been "too good to keep" later than January.

BREEDING SHEEP FOR MUTTON.

The fine wool growers of France are laboring under even greater difficulty in respect to the low price of their product than are those of this country. The inspector-general of agriculture at the late exhibition of the Nancy Agricultural Society, reviewed the situation in his address, and ventured some advice that may not be inappropriate in many localities in this country. M. Lembezat said:—

"You know perfectly well, gentlemen, that for a long time past the principal profit which cultivators have sought in breeding sheep has been the fleece. At one period, when the use of cotton was little known—first in consequence of its dearness, secondly because cotton stuffs were considered less healthy, and thirdly because the custom of wearing woolen clothes was an old one—the production of wool was a very advantageous operation. At the time of the continent blockade, considerable fortunes were made in the Beauce, in the Brie, the Picardy, and in the Chatillonnais; and for a long time afterwards cultivators made money with their sheep, either from their wool or by the sale of reproducers. But a very prosperous industry which supplied Europe first and subsequently several parts of the new world, has spread in profusion the Merino breed, which, originating in Spain, had been improved in France, in a remarkable manner from the double point of view of weight of fleece and quality of wool. There is a limit to everything, gentlemen, and France, after having obtained considerable profits from the Merino breed, which it sold at very high prices, could not entertain the hope of keeping indefinitely a monopoly of wool and reproducers. This is just what has happened. New economic conditions have introduced certain changes into international relations at the same time that the mode and processes of manufacture have changed. All these circumstances combined have produced the present state of things. The present situation had been foreseen. Twenty years since M. Yoart, now in retirement, but then Inspector-General of the sheep-folds and veterinary schools of the State, said to sheep-breeders: 'Change your sheep breeds into butchers' animals; become producers of meat, for wool will fall to prices which you do not suspect or anticipate.' There was no question at this time, gentlemen, as to a treaty of commerce; but, nevertheless, M. Yoart, with his great experience, was perfectly right, and exactly predicted what has happened. The advice which was given years ago, we repeat, and we urge, with all our strength, intelligent cultivators to enter upon the path indicated by M. Yoart. We may add that it is more economical to produce meat than wool, and it is easy to give a proof of this fact. All those who have reared sheep know that with a special and suitable system of feeding, we can according to the breeds dealt with obtain in a year, animals weighing 130 pounds to 180 pounds, and often even more. What, under these circumstances, is the ratio of the fleece to the total weight? In no case can this ratio be more than 10 per cent., and you will see that wool must be worth ten times as much as meat to render it as economical to produce meat as to produce wool. I would say to you, gentlemen of the east of France, who have many districts in which sheep prosper, address yourselves frankly to the object which I indicate to you, and you will find that the maintenance of a flock of sheep may be an essentially profitable operation."

RACKS AND FEED BOXES.

Stock enjoys sunshine and out-door air as well as human beings, and neither one nor the other should be deprived of the luxury. But our barn-yards are often unfit places to feed hay, straw or stalks; and if fed there, much is often wasted. Might not cheap racks and boxes be provided for this purpose, such as every farmer's boy can make, which, with fodder at present prices, will pay? In reply to this question, we copy the following article and illustrations from a late number of the *Rural New Yorker*:—

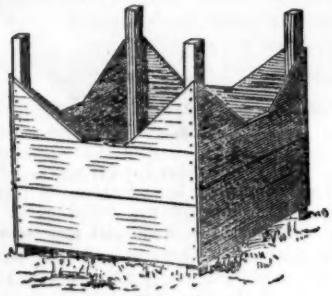


FIGURE 1.

We first notice Fig. 1. Though old, it cannot be too highly recommended. The peculiarity is that a few animals can quietly eat from it at the same time; therefore, to have all quiet in the barn-yard, provide racks for the accommodation of all stock at the same time, thus placing the weaker on an equal footing with the stronger in respect to the allowance of food to each. Place the rack under shelter, although the general health of the animals would be greatly improved if the arrangements were such as to feed them in open air on pleasant days, and under shelter during inclement weather. The heaviness of the racks prevents their being carried to and fro. This may be obviated by providing a double number of them, or making, in the open air, one similar to that shown in Fig. 2. A pole, B, is

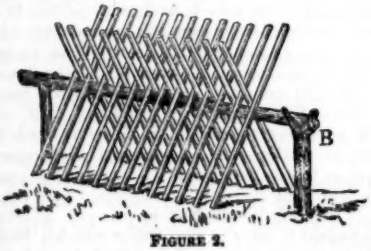


FIGURE 2.

supported near its ends upon crotched sticks driven firmly in the ground; across the top of pole B, rest poles whose lower ends are driven in the ground, crossing each other at the angle shown. Hay, straw, corn stalks and other coarse fodder are thrown in the rack. No specific length or size can be given; it should be governed by the size of the animals desired to feed from it.

A still cheaper plan of rack is given in Fig. 3. Through the space between the third and fourth rails of a common board fence is placed a number of small poles, secured in the ground at the opposite side. For keeping apart the

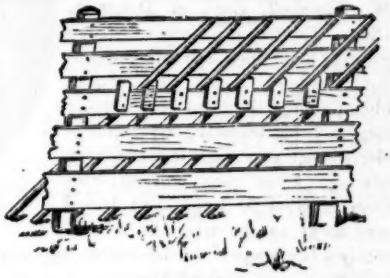


FIGURE 3.

poles any desired distance, bits of boards are nailed on. They should extend and be nailed to the fourth board. Hay is placed between the fence and upper portion of the rack.

Feed Boxes.

During the fall and winter many farmers feed their cattle on cut straw, roots grain, &c., for the purpose of fattening; and in a pecuniary point of view it is profitable. Cattle during the winter and spring are greatly benefited by an occasional mess of cut hay or roots.

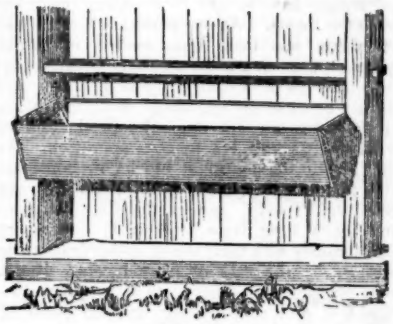


FIGURE 4.

Fig. 4 is a perspective view of a feed box, of a length equal to the distance apart of the posts to which it is secured by nailing; the bottom board is one foot wide; sides one foot high, sloping outward as indicated by the end pieces; partitions will be necessary when more than two are fed at the same time. Often it is not convenient to feed under shelter;

for want of room in this case, it is well to arrange a box similar to that shown in Fig. 5. A stake is driven in the ground near the fence

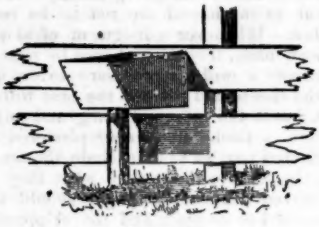


FIGURE 5.

to which the box is nailed. This may be objected to on account of its requiring to be cleaned after a storm. This may be obviated by the arrangement shown by Fig. 6, where the box is represented as bottom up, for the purpose of cleaning it. It was inverted by removing a wooden pin from the hole in the post above K. The dotted lines and arrow indicate the way it was turned. When in this position neither rain nor snow can get into it. It is so clearly shown in the figure that a further description is unnecessary.

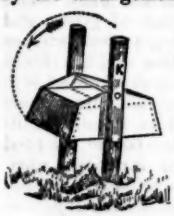


FIGURE 6.

EQUISETUM ARVENSE.

Horse-tail, Colt's-tail, Pine-weed, Mare's-tail, Polypod, &c.

We publish on another page a valuable paper, detailing experiments in the use of this weed with hay fed to horses. In Dr. Hayes' report of the result of his analysis of the plant sent to him by Mr. Fairbanks, as "Colt's-tail, or Fox-tail," and which it was supposed caused the death of a valuable horse, it is remarked that the botanical name of the plant was not known. We think it a little singular, and it is certainly to be regretted, that the expense of a careful analysis should have been incurred without ascertaining this fact. Common names are entirely unreliable. We presume—but of course we are not certain—that the plant analyzed is the same that is also known in some sections as Horse-tail, in others as Mare's-tail, as Polypod as Pine-weed, from its near resemblance to a miniature pine tree, &c.

In reply to an inquiry in relation to this plant, some four years ago, we were misled by our correspondent's use of the word Mare's-tail, to the conclusion that its botanical name was *Hippuris vulgaris*. Our attention was called to this mistake by Mr. Wetherell of the *Boston Cultivator*, and we are now satisfied that it is *Equisetum arvense*. The scouring rush belongs to the same order. This genus of plants are noted for the large amount of silex they contain. In some cases its ashes have been found to be one-half silex by weight. Hence the plant would seem to be far better fitted for the gizzard of poultry than for the delicate and somewhat peculiar stomach of the horse. And it is therefore possible that the deleterious effects ascribed to its use may be mechanical rather than poisonous.

Judge J. W. Colburn, of Springfield, Vt., late President of the State Agricultural Society, in a communication to the *Boston Cultivator*, in 1865, says, "when dried with the hay it becomes hard and brittle. It needs ruminating animals to prepare this dry, wiry substance for digestion. Sheep and horses eat it with a relish, but it is fatal to horses when fed indiscriminately with hay, particularly where it is liberally intermixed. It causes a stoppage in the bowels, induces blind staggers, and often kills the animal. I lost two, and saved three by veterinary treatment before being fully assured of the cause." Judge Colburn says it is known in his neighborhood as the Pine-weed.

A correspondent of the New Hampshire *Journal of Agriculture* for 1865, who had three horses sick with this disease in a single week, one of which he was obliged to keep in a swing for several days, says, "It is difficult to tell how this plant operates upon the system of the horse, but its effects are decided. The hind legs refuse their office as if paralyzed. The eyesight is affected, and the horse shies and steps back as if scared by some object in front. The bowels refuse their office, as also the urinary organs; the blood is black and thick, becoming almost like liver as soon as passed from the veins, and the animal becomes prostrate in a few days unless relieved by proper treatment. We recommend bleeding upon the appearance of the first symptoms, for temporary relief, after which the bowels must be opened by giving bran mashes, green feed, &c. Then give a ball made of the following: Barbadoes aloes, one ounce; pulverized ginger, one drachm; pulverized gentian

root two drachms. Mix with molasses sufficient to form the ball. Give no food for four and twenty hours. Give small quantities of water frequently after the recovery of the animal. The animal should be fed very sparingly and not exposed to the hot sun." This writer says that the plant was called Polypod by some of his neighbors.

How then shall we account for the fact that hay containing more or less of this weed is fed every year, and still so few horses are made sick by it that many farmers, even in sections where it grows in considerable quantities, have no faith in its injurious effects? Possibly in ordinary seasons there may be sufficient succulent or laxative properties in the hay, or other food, to counteract the constipating effect of this weed. We should be pleased to publish a more full expression of the views of Dr. Weeks, or others of the readers of the FARMER, on this point.

THE CHEESE FLY.

The only excuse for skippery-cheese, of course, is want of care. Cheese in hot weather should be closely examined every day. They require to be turned once a day in order to facilitate the curing process. The bandages and sides are to be rubbed at the time of turning in order to brush off or destroy any nits of the fly which may happen to be deposited about the cheese. If there are cracks in the rind or if the edges of the bandage do not fit snugly, they should at once be attended to, since it is at these points that the fly is most likely to make a safe deposit of its eggs. The cracks and checks in the cheese should be filled up with particles of cheese that have been crushed under a knife to make them mellow and plastic. When once filled, a strip of thin tough paper oiled and laid over the repaired surface will serve as a further protection of the parts. The cheese in the checks soon hardens and forms a new rind. Deep and bad looking checks may be repaired in this way so as to form a smooth surface scarcely to be distinguished from the sound parts of the cheese.

Some dairymen think that a darkened curing room is best for cheese, and at the same time is the best protection against the fly. We think this is a mistake. Cheese cures with the best flavor when it is exposed to light, and besides it can be examined more minutely from time to time, and freed from any depredations of skippers.

August and September are generally the worst months in the year to protect the cheese against attacks of the fly. Some years the trouble is greater than others, and various means have been resorted to for the purpose of avoiding the pest, such as rubbing the cheese over with a mixture of oil and cayenne pepper. These things generally do not amount to much and are not to be recommended. Whenever a lodgment of skippers has been made, they must at once be removed. Sometimes it will be necessary to cut down into the cheese and remove the nest with the knife, but if the colony is young and small in numbers, a thick oiled paper plastered over the affected part so as to exclude the air, will bring the pests to the surface when they may be removed. The oiled paper should again be returned to its place and the skippers removed from time to time, until all are destroyed.

If skippers begin to trouble the cheese, the best course to be adopted is to commence at once, and wash the ranges or tables on which the cheese are placed with hot whey. This will remove all accumulation of grease and nits about the ranges, giving a clean surface which does not attract the flies. If the cheese also are washed in hot whey and rubbed with a dry cloth, the labor of expelling the trouble from the curing rooms will be greatly facilitated. We have seen this course adopted with entire success in many instances, when much time and labor had previously been employed without effecting the desired object.—*X. A. Willard, in Western Rural.*

For the New England Farmer.

HORSE-TAIL, FOX-TAIL, COLT'S-TAIL.

Perhaps I might say a word, partly in answer to a short article which appeared in the FARMER of July 31, in regard to the result of the analysis of the herb known as fox-tail, or colt's-tail, by S. D. Hayes, chemist, Boston. He found nothing "poisonous" in the weed, and hence the conclusion that the horse may eat it without any deleterious effects upon the animal economy.

Having resided a few years in the valley of the Connecticut, where the weed grows in abundance, I instituted a few experiments which led me to believe that it has, at least, very powerful therapeutic or symptomatic,—if not poisonous,—effects upon the horse. My attention was first drawn to the subject by the peculiar sickness of my own horse, resembling megrims, or blind staggers, with the premonitory symptoms of apoplexy, i. e., giddiness, staggering, loss of appetite, head depressed, and in a half-unconscious, or stupid state, balancing from one side to the other, &c. I was also informed that some of my neighbors' horses were, and had been, affected in like manner, and, as was thought by some, from eating the "colt's-tail." One farmer in particular, who owned an island in the river on which the weed grew luxuriantly, had suffered considerably. I immediately examined my

hay, and found quite a quantity of the "colt's-tail" mixed with it.

The treatment I adopted was rest, abstinence, and a change to clean hay, and in three days my horse was well,—lively as ever.

Not exactly relishing the idea of losing my hay, and having a little doubt in reference to the "colt's-tail" theory, after a few days I commenced feeding the weedy hay again, and in about one week found my horse pretty "tipsy" again, or with the same symptoms as before, only aggravated. Treatment, as at first, with same result. This horse was about ten years of age, nervous, and of high mettle.

Thinking that possibly there might be some idiosyncrasy, or peculiarity about this horse that rendered him more susceptible to its effects than other horses, I fed this weedy hay to two young horses—four years old—and in a few days they exhibited the same marked symptoms, but in less degree; one being affected a day or two before the other.

My doubts were now somewhat removed. But in revolving in my mind wherein I might have arrived at an erroneous conclusion in the premises, it occurred to me that, possibly, there might have been some other article in the hay that produced this effect. I was, however, quite cautious about purchasing hay containing *colt's-tail* for a year or two, but at length was "caught" by buying a mow, the bottom of which I could not see at the time, and which proved to be pretty thoroughly mixed with it. This gave me the opportunity of trying the herb again, in full doses, and, as I glory in being an allopath, I gave this heroically. I came near paying dearly for my presumptuousness. However, the old horse (the "General") is still alive and is doing me good service, but he has eaten no more colt's-tail from my feeding.

Suffice it to say that in this last case the symptoms, treatment and result were nearly the same as in the first experiments; except that in the last, bleeding from the mouth might have been resorted to.

I have since had occasion to notice the same effects upon the horses of others, in a number —I might say very many—instances. And as this weed grows in profusion in the valleys, and to a limited extent upon the highlands in this section of country, I think, (if my experiments, observations and conclusions are correct,) that a timely caution in regard to the feeding of it may be of practical utility to those who have the care of so noble an animal as the horse. And although my experiments may appear, at first, to militate with the analysis of Prof. Hayes, yet I think it may not be impossible to reconcile them.

I would say, further, that cattle and sheep seem to eat this weed with impunity, so far as I know.

W. A. Weeks, M. D.

Walden, Vt., Aug. 16, 1869.

AGRICULTURAL ITEMS.

—A correspondent of the *Western Rural* cautions farmers not to feed string beans, cooked or uncooked, to hogs. He says they will surely kill them.

—A correspondent of the *Western Rural* has cleared his own hands and those of his friends from warts, by rubbing them with chalk a few evenings before going to bed.

—There are some large farms in New England. Col. David M. Clough, of Canterbury, N. H., has a field of corn of twenty-two acres, and another of oats of seventeen acres, and will cut 150 tons of hay this year.

—It is said that the introduction of the waters of the Mediterranean to the lakes by the Isthmus of Suez, has sensibly increased the hygrometric humidity of the atmosphere, and that fogs, as dense as those of Paris, have been observed in the rainless district.

—Cows sometimes get a surfeit of grass, especially in wet, warm weather, when the grass is succulent and rich. This feed distends the bowels uncomfortably. An armful of hay once a day will serve to absorb some of this moisture, and benefit the cow in several respects.

—Of the students in the Cornell University last year, there were engaged in Agriculture, thirty; Arts, forty; Chemistry, ten; Elective, eighty-one; Engineering, thirty-nine; Mechanic Arts, twenty-seven; Natural Science, fourteen; Philosophy, twenty-eight; Science, 143.

—The *Canada Farmer* says that the natural course of vegetation does not exhaust, but rather enriches the soil by eliminating plant food, and restoring it to the land in decayed vegetable matter. It is the artificial method of growing crops and *removing* them entirely from the land, without any return that impoverishes.

—A correspondent of the *Country Gentleman* says that hand friction—always rubbing down—will certainly keep wind galls from increasing, and if well applied for half an hour at a time, twice a day, will remove a new one, or materially check one of long standing.

—An Illinois correspondent of the *Country Gentleman* mentions, as observed facts, that if the wheat ear is not fully grown and the kernel therein fairly formed by or before the first week in July it will never fill with sound grain; and that if corn is not ripe by the first day of September it will not get ripe at all.

—A correspondent of the *Western Rural* says that Carbolic acid solution, (six drachms of the pure acid dissolved in one gallon of water,) is a cheap, harmless and certain preventive against the ravages of the bugs on vines. The yellow striped bug seeks other quarters immediately after it is applied. Wet the vines with the solution and pour a little at the roots of each stalk. I have

used it on my cucumbers and Hubbard squash vines this season with the best results.

—A correspondent of the *Western Rural* says that a few days ago on the farm of E. Kellogg, in the town of Cuba, Lake Co., Ill., a boy while raking hay pulled out of the ground a clover root that measured six feet and four inches in length. The root parted before leaving the ground; how much remained he was unable to state.

—The consumption of beef in the United States is estimated at 2,000,000 tons per year, while in France it is only 900,000 tons for an equal amount of population. Everything in the meat line that can possibly be utilized for food has been made use of in France, and the most learned savans are continually employed in exploring the field for additional sources of supply.

—A writer to the *Boston Cultivator* states that, having moved his barns the past season to some distance from the trough where the animals had formerly drank, a considerable stream of water during a freshet flowed between the barn and the old watering place. On turning the cattle out the first morning after the freshet, several of the larger ones passed over the stream to drink, though the water was so deep that they had to swim.

—The *Western Rural* says that spring wheat is very extensively grown in Illinois, Minnesota and Wisconsin. The favorite varieties are the Canada Club and the Canada Fife; while the Rio Grande, China, Australian, and several new varieties introduced by the Agricultural Department, are highly spoken of. In Michigan the Diel, Treadwell and Tappahannock are highly esteemed varieties of winter wheat.

—Mr. E. W. Potter, of Greenfield, Mass., it is said, has a grade Short-horn cow, ten years old and weighing 1400 pounds, which came in about April 1, and after being turned on pasture, about May 20, gave 68½ pounds of milk in one day, and July 12, was giving about 30 quarts of milk. The family used one quart of milk daily. From the rest there was made in one week 18 pounds, 9 ounces of butter.

—Dr. E. M. Hale, of Chicago, read an essay before the Cook County Homeopathic Society, on the poisonous effects of the potato bug on the human system. He thinks the poison in the Colorado potato bug is among the most virulent in the animal kingdom; that it is *volatile*, or that it may be volatilized by the action of heat, which is not the case with the poison of *cantharides* or any other animal poison.

—An English writer says that soft eggs are generally caused by over-feeding the hens, and the remedy is then self-evident. It may, however, occur from want of lime, which must of course be supplied, the best form being calcined and pounded oyster-shells. Occasionally it is occasioned by fright, from being driven about, but in that case will right itself in a day or two. If *perfect* eggs are habitually dropped on the ground, the proprietor should see whether the nests do not need purifying.

EXTRACTS AND REPLIES.

CHESTER COUNTY HOGS.

Much is said and written about *thoroughbred* Chester County hogs. Is there such a breed of hogs? F. F. Fisk.

Mast Yard, N. H., Aug. 21, 1869.

Remarks.—The answer to this question might perhaps depend somewhat on the definition given to that loosely used word "thoroughbred." Worcester defines thoroughbred as an animal "produced by parents of pure blood on both sides." In defining what is intended by the expression "a thoroughbred horse," Stonehenge says, "the horse which is entirely bred from one source is pure from any mixture with any other, and may be a pure Suffolk Punch, or a pure Clydesdale or a pure thoroughbred horse. But all these terms are comparative, since there is no such animal as a perfectly pure bred horse of any breed. • • • Even the best and purest thoroughbreds are stained with some slight cross with the old English or Spanish horse; and, therefore, it is only by comparison that the word pure is applicable to them or any others." This may help us to an answer to our correspondent's inquiry,—there is such a breed as the *comparatively* thorough-bred Chester County hogs! But from the statements that we have seen by those who have received animals from breeders in Chester County who have advertised them for sale, it would seem that the word comparative would be as convenient in describing the appearance as the blood of the breed.

We have seen a statement that this breed was originated some forty years ago by a cross between the best native stock of the county of Chester, Pa., and a boar imported from Bedfordshire, England, by a Capt. Jeffries. In an article on the "Large Breeds of Swine," by Sanford Howard, published in the *Country Gentleman*, in 1866, it is said, "The Chester County, or Chester White hogs have received a large share of attention in the agricultural papers of late years. They have been kept in Chester county, and other districts of Pennsylvania, for many years. Those which have been latterly sent over the country under the name above given, vary much more in their points than those I saw twenty years ago. The old stock may be described as follows: Head large; the nose or snout thick, but not long for the size of the animal; the ears large, thick and flapping; the body rather long, and tolerably round; the back generally hollowing, frequently with a considerable depression immediately behind the shoulders; the legs generally large in proportion to the size of the body, and in fat animals frequently giving way so much as to bring the dew-claws fully to the ground; the skin rather thick, and covered with long, wavy bristles. Many of the hogs now called

Chesters, or Chester-whites, have upright and somewhat thin ears, less bristle, thinner skin, and less coarseness of bone than the old stock, plainly indicating a cross with some finer breed.

RAISING POTATOES FROM SEED BALLS.

I wish to inquire through the FARMER the proper way and time to plant potato balls, in order to start potatoes from them. JNO. L. FRYE.

South Danville, Vt., Aug. 16, 1869.

REMARKS.—After gathering the balls in the fall, they may be kept in a dry place in paper bags, or in a box of sand packed as hens' eggs are in oats or chaff If you wish to have them grow as large as possible the first year, it will be well to plant the seed in a box of fine earth the last of March, or first of April, and keep them in the house, as you do tomato plants. till all danger of frost is passed, say till into June, when the plants may be put out in the open ground. In order to lengthen out the season, it may be well to protect vines from early fall frosts. In this way some of them may attain to nearly the size of hens' eggs the first season, but most of them will be much smaller. The next year they may be planted in fine, rich soil, the same as other potatoes. They will not be uniform in appearance or character, and Mr. E. C. Goodrich, of Utica, N. Y., who raised varieties by the thousands, said that not until a sort is four or five years old can its character be settled so as to entitle it to confidence. In raising new varieties of potatoes from seed, you will most probably be disappointed if you anticipate great success. It is much like raising new varieties of apples from seed. In either case, the probabilities of producing a variety equal to the best of those now cultivated are very small. Mr. Cole, a former editor of the FARMER, commenced some experiments with potato ball seeds in 1848. But as he died in 1851, and was quite unwell for some time previous to his death, he probably did not complete his experiments with them. He collected the balls from different sections and from different varieties of potatoes. The product the first year from a single seed was in some cases equal to about a quart. Of some two hundred plants, he found the product of nearly every one the first year was distinct in appearance. Cultivators generally select a few of the most promising of the first year's crop for subsequent trial, rejecting the great majority as worthless.

"WESTERN OATS."

In the FARMER of August 21, you speak of three heads of Norway oats taken from the field of Mr. Samuel Hosmer, of Acton, Mass., one of which contained ninety grains, while the largest number of grains in three heads of the common variety was but twenty-six. This prompts me to write and inform you of my oat raising the present year in old sterile New Hampshire. Enclosed is a head of ninety-two grains, if I count correctly, of black oats, taken from a piece of about two acres, on which corn was raised last year. Before planting the corn twenty ox-cart loads of yard manure were applied to the acre, and none since. On these two acres I sowed last spring one bushel of oats, kindly furnished to me by William R. Bunker, Esq., proprietor of the Pawtuckaway House, in Epping, N. H.; being part of one hundred bushels bought by him at Portsmouth, for use in his stable, and which he called "Western oats." My own oats had become run down, and I wished to change my seed. None of my neighbors had courage to try this unknown variety. Although I think I seeded too scantily in this case, I believe that generally oats are sown twice or three times too thickly—the common rule being two or three bushels per acre. I have not yet harvested the oats, but some of my neighbors set them as high as forty bushels to the bushel of sowing. If such should prove the case, I think they are fully equal to the far-famed Norway oats. As many as nine stalks have branched from one kernel in some cases.

Can you inform me, from an examination of the enclosed head, the true name of the variety? Its appearance in the field is somewhat like that of the Horse-mane, the grains of which are white, while of mine they are black. M. J. HARVEY.

Epping, N. H., Aug. 24, 1869.

REMARKS.—Our head is not level on oats. There is a black oat called the Pennsylvania Oat. Statements have been made that both black and white oats have been sold for "Norway" and for "New Brunswick," by different dealers.

RAISING CALVES.

An item on this subject, by one of the FARMER correspondents, called attention some time since to what seems a small matter, but yet one which is quite important, viz., having the milk warm when fed to the calves. At the first thought it might appear that there was but little difference between warm and cold milk. Such, however, is not the case when fed to young calves. And I am convinced that not a few of us are unsuccessful in raising good calves from lack of attention to this small matter. Next to good, warm, sweet milk, a calf will take fine, early cut hay the best. Many farmers who have raised stock for years suppose grass the best thing for them, after they are a few weeks old. A little observation will convince any one that this is a mistake. Good sweet fine-feed, or middlings—mind that they are *sweet*, though—make as good grain feed as can be got, perhaps; barley and rye meal, fine ground, are both excellent, and much better than corn meal. Always give it dry. All the porridge, pudding, and gruel preparations I have abandoned after trying them. First, warm sweet milk the calf easily learns to take; next sweet early cut hay; then the rye or barley meal or middlings, either of which the calves learn of themselves to take, without any handling whatever. On this feed, with care and a nice warm stable and a clean nest, they can be got into milk in from eighteen to twenty-two months. A dry, clean bed is a very important thing if you want a calf to do well; and a pretty large amount of bedding is required for half a dozen calves.

THE JERSEY STOCK.

With me, the Jerseys are generally, or always, very small and wild at birth; in these respects being quite different from the natives which I own. Though they sometimes come forward and make a rapid growth afterward, they are always more crazy and frisky while calves, and difficult for boys to lead with the rope. The bulls of this stock are almost always vicious, at least, so far as my observation goes, and should always be handled with caution. Among the half bloods and other grades of this stock are found many excel-

lent milkers,—though according to my experience the quality does not equal the best Short-horn grades.

The unwillingness of the cows to be milked has, in many instances, been a serious drawback on their value; and in numerous instances within my knowledge have they been put off, because no amount of patience and coaxing would induce them to willingly give their milk. J. O. B.

Chestnut Hill, Mass., Aug. 6, 1868.

CABBAGE WORM—*Pieris Rapæ.*

Enclosed in box you will find five worms; a sample of the kind that destroys cabbages. They commence in the head. What kind are they? What do they originate from, and what shall I do to get rid of them? H. H. Ballou.

Essex, Vt., Aug. 16, 1869.

Herewith I send you a box containing a piece of a cabbage leaf, with small nits or eggs attached to the under and upper side of it; also, a cabbage worm and butterfly for the inspection of Mr. Samuel H. Scudder. I have not been able to raise a respectable cabbage for some four or five years, on account of the ravages of this species of voracious rascals. Three weeks ago I had some nice looking plants; now there is nothing left of them but the fibres covered with filth. I tried to protect them by applying salt, also hard wood ashes; but in vain. Again I think I shall use a thin screen for a certain length of time.

Garland, Me., Aug. 23, 1869. H. C. Preble.

To the Editor of the New England Farmer:—The specimens sent to you by Messrs. Ballou and Preble, were the same as those of which I had previously written to the Farmer—*Pieris rapæ.* It is an unfortunate English importation, and is spreading very rapidly. I have myself seen it this summer in the city of Boston, and have received it from northern New Jersey, where it is doing great injury.

I cannot find any eggs attached to the leaf sent by Mr. Preble; if there were any they have either been broken in transmission, or the enclosed caterpillar has escaped and eaten its shell—as is its custom. The egg will undoubtedly prove to be a minute, pale, conical nit, like the tip of a pin.

S. H. Scudder.

Natural History Rooms, Boston, Aug. 30, 1869.

Remarks.—The previous article written by Mr. Scudder, was published in the Weekly Farmer of June 12, and in the Monthly at page 362. In that article he said this species produce two broods a year,—one in May and the other in July; the butterflies are of feeble flight, and can easily be taken in a scoop net, which is, perhaps, the easiest way of keeping them in check.

When we first opened Mr. Preble's box, we noticed a very small worm on the cabbage leaf, which had probably hatched on the way and died before Mr. Scudder examined it. This species is not mentioned in the "Synopsis of the described Lepidoptera of North America," published by the Smithsonian Institute in 1862, although Mr. Harris' *Oleracea* is.

CURING TOBACCO.

It occurs to me that perhaps a few words would not be amiss at this time, upon the methods adopted by our best growers in curing their tobacco after it is housed. Much depends upon the care and skill of the grower, at this important point of time in the production of fine colored leaf, and in guarding against pole sweat. It is probably true that a good whistle is very seldom made from a pig's tail; and equally true, that good, firm wrappers are not made out of originally thick, heavy leaf. Still much can be done to secure the best possible results, from the quality of leaf grown.

It is now the practice to give our tobacco all the air that is practicable; until the sweating period is over. If the weather is hot and sultry, attended as this weather frequently is, by a humid, foggy, atmosphere, it is well to shut the sheds as tightly as practicable, during the dampest portion of the time, and then give all the air you can when the air is the dryest. If there is a breeze stirring, give the tobacco the benefit of it. If the weather is rainy, shut your sheds, and keep the moisture out of them as much as possible, but open as soon as the weather clears up, and let it dry off as soon as possible.

After the sweating stage has passed, we think it well to keep the shed shut more, giving it less and less air. And when the leaf is nearly all cured down, it is well to let the shed be open in damp, rainy weather, and closing it in dry weather, so that the leaf may dry off slowly. In this way a more uniform color is obtained. Unless this course is pursued the leaf often has a variegated look or appearance, which is very forcibly expressed by the term "calico."

After the tobacco has dried down, it is best to keep the sheds shut for another reason,—to prevent the wind from blowing it about and whipping and breaking the leaves. When tobacco cures down quick we think it is apt to be lighter colored, and perhaps this end is attained in a measure by hanging the plants with lath, as the splitting the stalk hastens the drying process. Observer.

North Hatfield, Mass., Aug. 30, 1869.

TREATMENT OF SICK PIGS.

A few years since I had a fine shote, four months old, taken with spasms, and purple or red spots came out on it, similar to the case described by Mr. Brewster in the Farmer of August 28. One neighbor said, "Rub the issues on his fore legs with a cob;" another said, "pull out his black teeth;" all which I did, to no good. An old lady advised me to give it half a pint of lard melted in a pint of new milk. I gave it according to direction, and in a few hours my pig was well. Two of my neighbors have had sick hogs, (150 and 250 pounds, respectively.) I assisted them in administering the same dose to them, and both were cured. I think in every instance it was a stoppage, which the lard and milk at once removed. Put the lard and milk in a tin dish, set on the stove and heat until the lard is melted. Administer warm.

L. L. Pierce.

East Jaffrey, N. H., Aug. 30, 1869.

In reply to H. M. Brewster I would say, that a few years since I was called to see a sick hog; I found him precisely the same as Mr. B. describes his hog to have been. I started the blood by clipping his ear, threw cold water on to him, made a mud hole for him to wallow in, which he frequently used, and in a few days got well. I think if costiveness prevails, an injection of soap suds would be beneficial. D.

Groton, N. H., Aug. 29, 1869.

I would say in reply to H. M. Brewster, that a neighbor of mine had a valuable hog attacked with the disease he describes, the name and cause of which is unknown in this section. The remedy used was a small piece of garget root inserted in each ear, in a manner similar to that employed in garg[illegible]ting cattle; the ears the day following were

much swollen, and it proved effectual, the hog having fully recovered.

My experience goes to show that a cellar is an unhealthy place to keep hogs in. They should have a dry, warm bed, or place to lay in, with plenty of fresh air and sun. E. E. BERRY.

Farmington, N. H., Aug. 30, 1869.

I have had several hogs that have shown the symptoms described by Mr. Brewster. My way of treating them was showering them often and freely with cold water. All that I treated in this way speedily recovered. One which I neglected to shower, on account of the intensely cold weather, died. S. M. W.

Holderness, N. H., Sept. 1, 1869.

FARMING BY A GRADUATE OF HARVARD COLLEGE.

My old Friend and Classmate:—I am now, today, just through with my harvesting, and stacking of small grain, thirteen large stacks. Though I do not work much myself, yet it requires my constant attention and care to see that everything is done up right, and in a farmer-like manner.

Our next business is to thresh out the grain, which is done with a ten-horse power threshing machine; and then haul it, or so much of it as we wish to sell, to the depot, which is less than a mile from my farm, and take the going price in cash for the lot.

I have already been ploughing for fall wheat. We commence sowing with a one or two-horse wheat drill, about September 1, and put in about eight acres per day. All crops in this section of the country are very good this year.

The improvements in machinery, and the use of the most approved kinds, have rendered farming a very pleasant, interesting and profitable business.

I have the Marsh harvester to cut my small grain, wheat, oats, barley, &c. One man drives; two men ride and bind up the grain as it is cut, and throw the bundles from the machine; and one man follows and shocks up the grain, putting about a dozen bundles in a shock. This machine is drawn by two stout horses with ease, and cuts from eight to ten acres per day.

I am under much obligation to you for "Old Town Folks," the new Triennial Catalogue of Old Harvard, and numerous other favors. C. L.

Troy, Kansas, Aug. 4, 1869.

REMARKS.—We have been permitted to copy the above from a private letter addressed to a gentleman in this city. When the graduates of such institutions as Harvard College find that agriculture offers inducements superior to those of the professions or of commerce, may we not safely allow the students at our agricultural colleges, and even the sons of farmers, to take their course.

DEATH OF STEPHEN RICHARDSON, OF WATERFORD, VT.

From time immemorial the world has given generous praise to its heroes and great men. This is well. But has it duly honored its *good* men, especially those whose lives have been passed in what may have been regarded as the narrow spheres of action? Believing that it has not, we take our pen to write a brief obituary of a good citizen, a valued neighbor and a true friend. Mr. Richardson was a successful farmer. In his farm management and operations he was systematic and particular. He was an admirer of good stock, raised it himself and took much pleasure in examining that of others. He kept good fences and was careful that his own animals should not encroach on the premises of his neighbors. He took great interest in our agricultural fairs, in which he was not only an exhibitor, but an active and prominent manager, and was for many years a reader of the NEW ENGLAND FARMER.

But it is chiefly as a citizen and neighbor that his loss will be felt by the community. As such he was intimately known to the writer. During the war he was one of our foremost men in the performance of every patriotic duty. In every thing calculated to promote temperance and morality, he was an efficient worker. He was especially well qualified to assist families in sickness and in the hour of mourning and sorrow, and there is hardly a household in the neighborhood which has not cause to remember with gratitude the ministries of his sympathizing heart and open hand. His sober honesty and independent manhood secured the confidence of all. But he has left us, and we may well exclaim with one of old, "All ye that are about him, bemoan him; and all that knew his name, say How is the strong staff broken and the beautiful rod." P.

Waterford, Vt., Aug., 1869.

CROSSING MERINOS WITH COARSE WOOL SHEEP.

Seeing Mr. Hart's communication in the FARMER of August 21, I am induced to say, for the benefit of such as wish to retain their fine wool sheep and raise lambs for mutton, and have doubts of the safety of the sheep at the time of lambing, that accepting Mr. Hart's advice last fall, I selected twenty from my flock of fine wools, selling the balance for pelters. My sheep were not large, —hardly medium size compared with others. Fearing the result of using the large buck I received from Mr. H., I used a lamb from the same stock, and must say I was happily disappointed in regard to the anticipated trouble of taking care of the sheep and lambs in the spring. From the twenty ewes I raised seventeen lambs—no twins—and did not lose a lamb. They seem to possess a hardier constitution. All they require is milk, in want of which from the mother, they must be fed. I fed the sheep well, but did not feed the lambs, except that they came to the trough to eat with the sheep. I never had so little trouble with lambs in the spring before. They went to market August 16, at an average age of less than three months, and were worth at least a dollar each more than lambs from same sheep last year, at six months' old. A townsman driving lambs at the same time remarked, that one of mine was worth two of his, the lot through. I would not recommend that lambs of this cross should come early, for the reason that the merinos do not usually have a large supply of milk at hay without extra feed, but at grass will do very well. I have Cotswold lambs dropped in the month of April whose wool will measure six and a half inches. A. D. ARMS.

Montpelier, Vt., Aug. 23, 1869.

A GOOD COLT.

Perhaps the following facts will suggest to some of our agricultural friends the importance of breeding from good stock.

Mr. Wm. Hanson, of Williamstown, Vt., sold to Mr. V. M. Hubbard, of Rochester, Vt., a two-year-old colt, standing fifteen and a half hands high, and weighing the day before he was two years old, ten hundred and thirty-five pounds, for the sum of four hundred dollars. Said colt was sired by the well known Benedict Morrill. Its dam a black Bullrush Morgan mare, weighing in fair flesh eleven hundred and fifty-five pounds, and stands fifteen hands high. If any one has a better colt we should like to hear from him.

Williamstown, Vt., Aug. 30, 1869. W. H.

Cooking Stove

BAR MUZZLE TO PREVENT CRIB-BITING.

Dr. Dadd believed crib-biting to be a habit and not a disease. Mr. Youatt says, although some learned judges have asserted that crib-biting is simply a trick or bad habit, it must be regarded as unsoundness. In the new work on "The Horse," from which we copy the an-

nexed illustration, recently published by Porter & Coates of Philadelphia, cribbing is ascribed to "a diseased condition of the stomach, for which there has never yet been a cure discovered, except on the principle of restraint."

Various contrivances have been used to prevent or "restrain" cribbing. In the weekly FARMER for Jan. 23,—Monthly, page 116,—we gave a cut to illustrate an arrangement of the stable for this purpose. A very common method, says the author of "The Horse," is to buckle a leather strap so tightly around the neck, just behind the jaw, that when the horse attempts to crib, he tightens the muscles of that part, and these being pressed against the strap, occasion such pain that the act is not completely carried out, and even if it is on the first occasion, the attempt is not repeated. The strap is buckled sufficiently light to do this without much impeding the act of swallowing, or the flow of the blood. Sometimes prongs are inserted in the straps to make it more effective. The manger is sometimes entirely dispensed with and the animal is fed on the floor or ground. "But by far the best preventive," says "Stonehenge," (J. H. Walsh) "in my opinion, is the bar muzzle, consisting in an iron frame-work, covering the lips and nose, and suspended from the head by a leather head collar, so that the lips can reach the corn or hay, but the teeth are too wide to pass through the bars and seize the manger. This mechanical contrivance is entirely harmless, and perfectly effectual, the sole objection to it being the fact that it proclaims the wearer to every one who looks into the stable as a cribber. This may be valid reason for rejecting its use for dealers' horses, but in a gentleman's stable, utility and humanity ought to have precedence of such a feeble argument. When the bar muzzle is adopted, it should always be kept on, excepting, of course, when the bridle replaces it for work or exercise, or while the head is being dressed."

COOKING FEED.

After alluding to the fact that most Western farmers who have tried cooking feed for stock praise the plan and then quit it, a correspondent of the St. Louis *Journal of Agriculture* says the reason probably is that farmers generally try to cook in a kettle, and great attention is necessary to prevent burning the bottom. A steaming apparatus is too expensive. He has tried steaming corn with a false bottom, and it does not answer at all. He believes it may be done economically by the use of hot water, which he says contains sufficient heat to cook anything placed in it, provided this heat can be confined and not allowed to escape. He continues:—

Allow me to direct the experiments of your readers this fall to one point: At the last Paris (France) Exposition, the Poor Man's Cooking Stove, from Norway, arrested general attention. A vessel of any kind was enveloped by a considerable quantity of non-conducting material, such as felt, wool, &c.; into this vessel was poured scalding water, and the piece of meat to be cooked placed in the water. Tight woolen covers were then placed on the vessel confining the heat. After the lapse of a few hours the meat is taken out thoroughly cooked.

Let us apply this principle to our farm economy. Have a large box, properly prepared, steam tight. Put it within another larger box, with cut straw and sawdust between. There should be a non-conducting substance, like saw-dust, not less than twelve inches thick, packed around the scalding box, including the bottom and top. We will scald our hog feed in this, confining the heat as directed. The hot water may be economically had, on the plan first suggested, by placing a large boiler on an extension cooking stove. Thus ten or fifteen gallons may be heated three times a day, or a total of forty gallons. We are trying this plan and like it.

THIRTY thousand acres of public lands were disposed of to actual settlers during January, in Nebraska, Minnesota, Missouri and Wisconsin.

BREEDING MARES.

NO MISTAKE has been more common among farmers, and none attended with more pernicious consequences, than that of bringing colts from animals unfitted to bear them. With all the keenness of observation, and the experience which many horse breeders possess,—and they are usually among our most shrewd citizens—it is surprising that they have not yet discovered the great error of breeding from imperfect dams.

Every person may see, if he will, that points of physical beauty or defect are constantly transmitted to offspring, both from sire and dam. It is a law of nature that like begets like. If the slightest attention were paid to this rule, it would seem that no one would employ a mare to perpetuate the race which was known to be defective in any of the points which go to make up a good animal.

The same rule holds good, too, with regard to disposition, temper, or character. These are all important traits; traits so valuable that comfort, and even life itself, may depend upon them. And yet, because a mare has some one or two rare qualities, she is kept for a breeder, though she may possess several others, any one of which ought to condemn her for that use.

If two or three general rules were observed by all breeders, great changes might be wrought in a few years. The first of these is, *Never to breed from an old animal*, whose body has been injured and its vitality weakened by injudicious treatment or by too severe labor. The results which follow these are obvious to every observer, both in man and beast. They are all impressed upon the living organism, and can no more be separated from it than breath can from the body and life still be preserved. They are *there*, whatever they may be, and will be imparted to the offspring, just as sure as "like begets like."

It is possible that cases may exist where it is safe to breed from an *old* mare. Two of the finest horses that reins were ever drawn over were from a mare nearly *thirty* years of age, but she was perfect in limb and spirits; had always been owned by the same person, and fed with as much regularity as the owner's meals were served; she was never raced at a "military muster," or overloaded in any way, and at *thirty-three* years of age, she and her mate, of about the same age, were not only sound in wind and limb, but were a pair to be proud of when one held the reins over them. A pair of her colts, born after she was *twenty-five*, sold, under our eye, for twice as many hundred dollars as other fine horses about them brought! A moderate old age should not, therefore, absolutely exclude the mare from breeding, if she is right in other particulars.

The common practice for many years past, and one which has become woven, as it were, into the habits of the people, so that it seems as natural as the breath of life, is, to *keep the old mare for breeding, when she is unfitted for service on the road or on the farm!* This is where the evil commences. She is a favorite animal, was handsome, spirited, and with a power of endurance almost beyond belief. But now she is seventeen years of age, has a spavin, a slight touch of the heaves, and one or two other trifling matters which are a little inconvenient for a working animal, but she will make a good breeder, and about pay her keeping besides! This is the conclusion arrived at, and thousands of such cases exist among us to-day.

So the old mare, crippled by too early labor and disabled by disease, is to become the progenitor of a race which is to occupy a certain locality, perhaps, for a hundred years! It is scarcely possible that her young will not be injured before they see the light; and the strong probability is that each one of them will bear the marks of her imperfections. Some with ringbone, perhaps, or asthma, or spavin, or some lurking disease that had not developed itself in the over-worked and disordered mother. We have seen a yearling colt with a ringbone upon every foot. Well-formed otherwise, apparently healthy, eating and drinking well, but suffering and utterly worthless.

The subject has several other points of interest, some of which we will speak of in a future article.

WESTERN SUBSOIL.—A correspondent of the *Journal of Agriculture* says, the subsoil of most of our Missouri lands, and also in Southern Illinois where I have had occasion to observe it, is of a very hard, not tenacious, but rather brittle consistency; a stiff clay,

with a large admixture of sand and lime. It is in fact the same soil as the crust which we plough, except that it is devoid of humus, or decayed vegetable matter. It is universally asserted in Southern Illinois that their soil will produce good crops of wheat, even if taken from any depth down to the lime rock. This will, in a certain degree, also apply to our Missouri subsoil, but only on condition that this subsoil be exposed to at least one winter's thorough freezing after it has been thrown up.

CURCULIOS KEPT OFF BY HOGS.

In confirmation of the theory that the curculio will not meddle with the fruit on trees standing in a hog-pasture, a correspondent of the *Rural New Yorker* relates the result of an accidental experiment made by him on his farm in Indiana, some years ago. Wishing for a lot to feed his hogs in, he made a fence which enclosed about one-half of a parcel of some twenty plum trees, which blossomed full every year but matured no fruit, as it all fell off before ripe. That season the trees outside of the hog-yard dropped their fruit as usual, while those inside, though the hogs almost dug them up by the roots, not only grew well, but were so full of plums that the branches had to be propped up. The next season the fence was changed so as to take in the trees left out the year before, and the result was plenty of ripe fruit from all of them for several years. Others, he said, tried the experiment with the same result.

For the New England Farmer.

WHEAT RAISING.

Having seen several communications this season, on the all-important business of raising wheat, I thought I would give you a little of my experience, though but limited.

In the spring of 1860, I had a field of six acres that had been planted to corn the previous year, which I sowed to spring wheat. The spring was so early that I got my wheat all sowed and harrowed in, bushed and rolled the 18th day of April. The result of the crop was published in the FARMER of Sept. 12, if my memory serves me, but of which I will only say here that I got 222½ bushels from the six acres. Encouraged by that, I have sowed more or less wheat every year since, and during that time there has been but one year that I have not raised and sold over $100 worth of wheat, besides the bread for my family, and in three years in that time, have sold from $200 to $300 worth a year.

Last year I harvested seventy-five bushels from three acres of winter wheat, which sold for seed readily at $3.50 per bushel. I also had sixty bushels of spring wheat from two and three-fourths acres, a part of which got sprouted. Had it not been for excessive wet and hot weather while harvesting, it would have brought me $3 per bushel.

This year I had four acres of winter wheat, which I threshed one week ago, and measured up a little rising of eighty bushel, which I am selling for seed at $2.50 per bushel. This year I have only one and a half acres of spring wheat, which is not yet harvested, but will probably yield twenty bushels in all, being rather light.

Now, Mr. Editor, I fully endorse Mr. H. Poor's theory, that the New England States can raise their own flour, and even a surplus, if they will but try as hard as some do to humbug the people with Norway oats and Early Rose potatoes, &c. But as my article is getting too lengthy, I will stop for this time, but should like at some leisure hour to give your readers my method of raising wheat, and also my luck with Norway oats, Early Rose potatoes, &c. R. H. SIMONDS.

Hartford, Vt., Aug. 23, 1869.

VARIETIES OF WHEAT.—A correspondent of the *Canada Farmer*, who by way of experiment, sowed the past season—the White China, Soules, Treadwell, Kentucky White Midge-proof, Mediterranean Midge-proof, club-shaped ear (name unknown), and common Red Midge-proof, makes the following report:

The Treadwell does not seem any earlier than either the White China or Soules; the Kentucky White was almost all winter killed; having sown it now three years I would not advise any one to do so hereafter. The Soules, of course, is as usual excellent; the club-shaped ear is also good; the White China also; but the Treadwell is best of all. The other sorts, although very rank and tall, have badly filled heads. No midge has made any perceptible inroads on any of the seven varieties.

TO INTEREST BOYS IN FARMING.

Mr. J. Harris of Rochester, N. Y., one of the editors of the *American Agriculturist* and who was tendered a professorsbip in the Cornell University, illustrates some of the means by which boys may be interested in the affairs of the farm, by the following personal reminiscences and suggestions:—

When I was a boy my father made me keep the accounts of his farm, and I soon began to take an interest in it. He had ten children, and worked hard to give us a good education. When crops were poor, or prices low, it was with a heavy heart he sat down at night to tell me what to write in the book, and though

young, I soon learned to sympathize with him. Like all good men, he lived for his children. He worked hard for us, denied himself many luxuries that we might have a good time; would wear an old hat that we might have new shoes, and often walked that we might ride. Never was a happier set of frolicking young ones on a farm. And there is not one of us to this day that does not love farming. But those who talk of the "independent life" of a farmer—of his freedom from care and anxiety—merely show their ignorance.

There was plenty of anxiety on our farm. There was anxiety about the weather, about the crops, about the stock, and above all, about the health and life and limbs of the children. We ought all to have been killed half a dozen times over. One was kicked by a horse and ran a narrower chance of life than he has ever done since, and yet he has been through the war, has been up and down the Mississippi on a steamboat, and traveled the whole length of the Erie Railroad. "Aunt Hattie," as we now call her, had her head cut open with a donkey cart, and a sad house we had for many days as she lay between life and death. Another sister when three years old, caught hold of the spokes of the fore wheel of a heavily loaded wagon, and was thrown forward, and the wheel grazed her whole body. My father was driving, heard the scream, and looked round in time to see the danger, but not in time to stop the team. Fortunately the nurse held on to the child and jerked her out of the rut before the hind wheel reached her. Last fall, the eight children, who are still living, all met together, and it was found that every one of us had some scar that remained to remind us of the accidents of early life.

But what I wanted to say was that the habit of keeping the books of my father was not only a benefit to me, but a great comfort to him. He told me his fears, and I know now that it must have been a great relief to him. It certainly was a great advantage to me. If I know anything about farming, I learned most of it from my father. And I am fully persuaded that if a farmer would provide a nice, substantially bound book, and induce his son to write down every day, at his dictation, all that was done on the farm, it would go a great ways towards making a good farmer of him. It would be useful. I can imagine some such record as this:—

September 1st.—"Very dry weather. Cultivating for wheat." And then the boy would be very likely to ask when he was going to sow, and what kind and why.

Sept. 2—"Sow had ten little pigs last night, but killed two of them." "It is too bad," says the boy, "to lose them now, pigs are so scarce and high, and they say a rail nine inches high put round the pen, six inches or so from the boards, will prevent a sow from lying on the pigs." "I thought of doing it," says the farmer, "but I could not find the hammer, and we have no spikes." Mental reflection by the boy: "I left the hammer in the wagon." By the father: "Those two pigs at six weeks old would have sold for ten dollars."

Sept. 3.—"Thrashing. The five acres of Diehl wheat on the summer-fallow gave 150 bushels; the ten acres of Mediterranean after oats, gave only 120 bushels." "If we had sown it all Diehl," says the boy, "we should have had 450 bushels instead of 270." If the father is a sensible man he would correct this remark, and point out the fact that it was not the variety, but the condition and character of the land that made the difference.

Sept. 4.—"One of the horses sick." He had been on the thrashing machine all day, and the driver, to save his own horses, had made the farmer's do pretty much all the work. This horse was on the outside, and his end of the evener was no longer than that of the horse having the inside track, and he had to draw just as hard as the other and walk much faster.

Sept. 5.—"Drew the wheat to the city. Left at home ten bushels of Diehl for seed, and twenty bushels of Mediterranean. The Diehl overrun four bushels, and the Mediterranean fell short three bushels. Got $2 a bushel for the Diehl, and $1.75 for the Mediterranean." The five acres of Diehl came to $280, and the ten acres of Mediterranean, $175.

Now let a farmer tell his son such facts, and let him write them down as they occur, and the chances are that five years will not pass before the farm will be at least partially drained, weeds will have disappeared, thirty bushels of wheat and two tons of hay per acre will be the rule rather than the exception, and there will be little danger of that young man seeking a clerkship in the city.

PREPARING ANNOTTO.

Mr. Willard gives in the *Rural New Yorker* the following methods employed by old and experienced factorymen for preparing annotto for coloring cheese:—

First Recipe.—Dissolve six pounds concentrated potash and one pound saltpetre in five gallons of warm water, then add thirty gallons cold water, put in as much choice annotto as the liquid will dissolve, heat gently to a boil, put into a cask and store in a cool place.

Second Recipe.—Dissolve four pounds potash in one-half barrel of water, put in as much pure annotto as the liquid will cut. The mixture need not be boiled.

Third Recipe.—Take four pounds of best annotto, two pounds concentrated potash, five ounces saltpetre, one and a half pounds salsoda, and five gallons boiling water. Put the ingredients into a tub, pour on the boiling water. The annotto should be enclosed in a cloth, and as it dissolves squeeze it through the cloth in the liquid. About two ounces of

this mixture is sufficient for one hundred pounds of curd in summer.

In coloring cheese, the best way is to fix upon the desired shade by trial, marking the quantity of liquid used, and after that is known the same proportion will give color that is uniform.

HOW TO BUILD A CORN CRIB.

How to have a rat-proof corn-crib, is a great question among farmers. A correspondent of the New York Farmers' Club gives the following experience:—

"I have a corn-crib that has stood for twenty years, and has never had a rat, and but one mouse in it, to my knowledge. Posts ten or eleven feet long and eight inches square; mortise two feet from one end; for end-sills, two-inch mortise with tusk. Taper post from sill to the end, by hewing off inside until the end is reduced to four inches diameter; make smooth with draw-knife, and nail on tin smooth half way to the end, below the sill. Let sills be eight inches square; also, end tie them and the rafter plates strong with moderate inter-ties. Brace well, and lath up and down with three-quarter inch lath; dovetail or counter-sink joists crosswise; lay the floor, and board up the ends with ungrooved boards; let each bent be twelve feet long, six feet wide at the sill, and seven and a half feet at plate; and if full to peak, it will hold 250 bushels. I never had an ear to hurt on account of the great width. If preferred, lay the floor with lath or narrow boards, with room for ventilation. Each post should stand on stone, about three inches from the ground, and each stone have a foundation two feet square and below the frost.

Good Milk.—The following rules were unanimously adopted by the Illinois and Wisconsin Dairymen's Association, "to insure the delivery of pure, sweet milk:"

1. That no milk is good, which is made from filthy, stinking water, of sloughs and frog ponds.

2. That no milk is good that comes from cows dogged, or over-driven in hot weather, from the pastures to the stable.

3. That no milk is good, that comes from cows pounded or kicked or cruelly treated, by brutal men.

4. No milk is good that comes from diseased cows—cows that have sores filled with puss, or that have udders broken and running with corruption.

Potato Growing under Straw.—Mr. Geo. Clark, of Ecorse, Mich., recently sent us an account of an experiment by him in potato culture. The potatoes were cut and dropped in trenches which were four feet apart and six inches deep. These trenches were then filled with rye straw and cornstalks, so that, when stepped on, the straw and stalks were about six inches deep. The potatoes were then cultivated and hoed as is usually done with this crop, and the result was a good yield of medium sized and good eating potatoes, very few being rotten or hollow. Potatoes planted at same time and on similar land, but without mulching, gave a poor yield of small potatoes. Mr. Clark estimates his gain, from mulching this half acre, at $100.—*Western Rural.*

Are Bees Injurious to Fruit?—In answer to this question Dr. A. S. Packard, editor of the *American Naturalist*, in vol. 2, page 52, observes:—

"I would reply that all the evidence given by botanists and zoologists who have specially studied the subject shows that bees improve the quality and tend to increase the quantity of fruit. They aid in the fertilization of flowers, thus preventing the occurrence of sterile flowers, and by more thoroughly fertilizing flowers already perfect, render the production of sound and well-developed fruit more sure. Many botanists think if it were not for bees and other insects, *many plants would not fruit at all.*

A Sheep Medicine.—Mr. Ephraim Noyes of Jefferson, while on a call at our office last week, alluded to the great number of sheep that died the last spring, and said he did not in all cases attribute it to worm in the head. He lost nine from his flock, all from a disease known in his locality as "swelled neck"—a sort of enlargement of the thyroid glands, which are situated on each side of the upper portion of the windpipe. He saved three by giving them a single dose of a medicine composed of equal parts of spirits of turpentine and saltpetre, using four tablespoonsful as a dose. The swelling began to subside very soon after the medicine was administered. The youngest sheep of the flock were generally attacked first.—*Maine Farmer.*

Steel Watch Chains.—The small steel chain which winds round the fusee of a watch is about eight inches in length, and contains upward of five hundred links, riveted together. It is not thicker than a horse hair, and the separate links can but just be perceived with the naked eye. Modern invention has as yet discovered no substitute for this chain equal to it in slenderness, strength, and flexibility. Most of these watch chains are manufactured at Christchurch, in Hants. The links are punched out by girls from plates of steel, and very young girls pick up the link, and rivet one to the other. Watch-chain manufacture has been the staple of Christchurch for nearly a century—in fact, ever since pocket watches began to be generally carried.—*Exchange.*

USE OF MUCK.

MIXING IT WITH OTHER MATERIALS—SUCCESS IN ITS USE.

I read all that is published in the FARMER about muck with much interest. The reason is, I have a two-acre peat meadow, from two to twelve feet deep, with a tillage upland, somewhat sandy or approaching a sand. I have made a compost by mixing muck with ashes, lime, and sometimes fish guano. I use but one of these materials in the same heap. Would it be advisable to put ashes or lime into the muck with the fish guano? When either of these materials are added to the muck, how long should the heap remain before it is used? Can the agricultural editor of the FARMER, or any of its correspondents, speak from experience on this point? About a year ago, you published an article from a correspondent, saying that he thought of getting the water out of his swamp by pumping, and asking your advice. I meant to have kept that paper, but it got torn up and I have forgotten the man's name and place of residence. (See Monthly FARMER, 1868, p. 420.) I want to know whether he tried it, and if so, how he succeeded. I had come to the determination myself, to try pumping. My idea was to use horse power in doing it. I have not yet tried it.

Montague, Mass., 1869. ELIJAH GUNN.

REMARKS.—We have used large quantities of muck through a period of more than twenty years and have found it excellent on all kinds of land. It is a manure in itself, varying in quality considerably, but the *best* will be cheaper than most of the special fertilizers that are in use. It will be cheaper, because it will cost so much less, and may be used in thousands of instances without stint. It is a *permanent* manure. Applied liberally to a sandy loam, its effects are plainly visible for twenty years. On a heavy, granite soil we have found the roots of plants penetrating it in every direction, and the crops above it growing and perfecting themselves with wonderful vigor. There is little danger of your fixing too high a value upon good muck.

Unless the manure is to be used immediately, it is best to keep back lime or ashes and spread them upon the soil by themselves. It would save some time, perhaps, to put all the materials together and apply them in that form. But if the heap is to remain sometime, and the lime or ashes are mingled with the animal and vegetable matter, there would be danger that the fermentative process might be carried too far, and injure the whole.

When the heap is made up of muck and fish guano, it is important that it should remain two or three weeks, and be overhauled enough to get the whole mass completely mingled. If the heap were kept covered with fine muck, we cannot see that any harm would come to it if it were to lay for months, but be all the better for it. None of our manures are used in a state of sufficient fineness; at least none that are employed as a top-dressing, or placed near the surface. Even when ploughed under in a green state, they are not as evenly distributed as they ought to be through the soil. The crops, therefore, are uneven and unsightly on the field, and probably are lighter, as some patches are overgrown, while others are starved and lean.

Success in pumping the water out of a swamp will depend upon what the supplies are, and the area which you wish to relieve of water. It is usually a wearying and tedious work for human muscles to accomplish. When the work is once begun it must be continued, night and day, sick or well, because the water will press in all the more rapidly for what has been taken out. A horse-power, continued night and day, might be effective. The address of the writer of the article on pumping water from a muck hole, to which you allude, is Mark Farrar, Shrewsbury, Mass.

A friend of ours commenced on a farm some twenty-five years ago, and cut *six tons*, only, of English hay upon it, and about three times as much meadow hay. He now cuts about *one hundred tons* of English hay, and four times as much grain as he did at first. Within a hundred rods of his barn was a dirty swamp, covered with alders, and too cold, wet and dark, for frogs and other reptiles to inhabit. Not an acre of this swamp had ever been used within the memory of man, and yet it was only by dint of perseverance that he could purchase a single acre, and for that he paid *three hundred dollars!* But that acre has been his great co-worker and helper, and has assisted him more than any one thing besides, in wintering fifty head of cattle annually. "Go, thou, and do likewise."

WILD OATS IN OREGON.—While the native oat of the Pacific coast furnishes splendid pasturage and makes excellent hay, we learn from an article in the *Willamette Farmer* by T. L. Davidson, that it proves to be a pest in grain fields. The grains upon the stalk of this plant do not ripen uniformly,—a portion ripening and falling off, while others are green and immature. Each grain has a long, sharp beard, arranged so that when it is wet by the

rain or water it will move when placed upon your hand. It is said that there are fields of it in California that just after a rain seem like a mass of living worms working in the soil. These grains work deep into the soil, and keep coming up from year to year, and the farmer wonders, after summer-fallowing his field, why it is that he sometimes raises more wild oats than the grain sown. The worst fault of this plant is that it is so very hard to kill or get rid of in our grain fields. It is not fit for culture for the grain, hence it is a nuisance. Mixed with wheat or oats it lessens their value. Some oat crops in Oregon this year are nearly one half wild oats. It is believed that by summer fallowing, in connection with sheep, grain-fields may be kept clean.

For the New England Farmer.

SPRING WHEAT.

Culture of Sod Ground---Manures---Absorbents.

With many thanks to Mr. Henry Poor for his timely answer to my questions concerning winter wheat, of which I am now putting in a field (1¼ acres,) for the first time, on sod ground, and well fertilized, I would like to ask him if sod ground is also good for spring wheat? My soil is a light loam, but good for corn. I have found by repeated experiments that I can raise better corn on my sod ground, to plow it late in spring, just as *near planting time as possible*, than to plough it the previous season, at any time after haying,—no matter what pains I may take to pulverize the soil before planting. Whether the same is true of spring wheat, is the question. The fermentation of the green sod greatly helps the growth of the corn.

I have also set strawberries in like manner, on inverted sod, with great success. This, however, I do not recommend, as the plants do not, like corn, shade the ground; and it is too much work to keep out the grass springing up from the turned roots. But in case of spring wheat or oats, with a very thorough pulverization of soil, I do not see why it should not work as well as with winter wheat or corn. The roots of corn and strawberries penetrate the decaying sod, clinging tightly to the mass, kept so warm by the fermenting process. I have often seen the experiment tried of plowing different parts of a field of sod, all alike, and fertilized alike, one part turned soon after haying and ploughed, sometimes twice, in spring, and harrowed; the other part turned from the fifth to the fifteenth of May, and both planted at the same time; and in all these cases the best results were realized from the spring turned. I think it best to cultivate or harrow the manure in, and not turn it under the sod. The tendency is for manures to work downward, so that when buried too deep there is more loss by leaching. Still I know an old farmer and a good one, (over ninety, I think,) who spreads his manure on the sod, turns it under just before planting, and without harrowing or hill fertilizing, goes over the field and treads his five kernels of maize into the ground four feet apart in every third furrow. He has good crops by the means, but I think he would get more value from the same manure, by using it nearer the surface. I believe, as far as possible, manure should be applied in a green state, and *just* turned under. Let the fermentation go on in the soil, as it surely will, and the gases will be fixed and saved for the growing plant. No doubt a cord or a ton of rotted manure is more valuable than a like quantity of green, as the loss of water while fermenting, lessens both weight and bulk more than the loss of fertilizing matter. Still, if there is any value in the organic properties in the manure, their escape, while fermenting, is a *loss* of value, even if that loss be not so great as the diminution in quantity.

Always keep an abundance of absorbents, *housed when dry*, to put under your cattle to take up the liquid and keep it from wasting; and also to leave the manure in a better condition to work over and refine before applying. Besides, the action of these powerful solvents on the crude inorganic matter in the absorbents, they are a means of supplying considerable quantities of fertilizing material, otherwise not assimilable by plants. Never use sand for bedding! There is an ample quantity of silica in all soils, while the other manurial properties in muck and loam are of great value; and while loam is soluble, sand is composed of an infinite number of little hard particles, not fitted to absorb. Where sand is needed to warm land, spread it on the surface raw.

In one of his articles, Mr. A. W. Cheever speaks of using sandy loam for an absorbent. I would like to see an article on the subject of absorbents, from this careful experimenter. But—*always keep them dry!* JOHN.

Franklin, Mass., Sept. 4, 1869.

For the New England Farmer.

EQUISETUM ARVENSE.

The articles in the FARMER of the 4th inst., concerning the above plant, commonly known as Field Horse-tail, but in some sections by other synonyms, interested me much. Some thirty years since my father owned a very hearty and healthy brown mare. Being short of hay, he purchased a lot of grass, in the meadows running back from the Connecticut river, on some portion of which there was considerable of this weed. As it was something new to him, he did not particularly notice it or think of its being injurious in

any way, and he put it in the barn as usual, for feeding. As the hay was fed to this mare, he noticed after awhile that something was the matter with her. She appeared weak, staggered when taken from the stable, and I recollect that while attempting to harness her she came near falling down several times. We considered it quite a serious matter, but could not at first account for it. Her feed was changed, and she soon recovered; but upon putting her on the same feed, a recurrence of the same symptoms and effects took place. This horse was kept up to hay principally through the season, and the worst effects were noticed in warm weather. On inquiry among neighbors, we became convinced that it was owing to eating this weed. A near neighbor had hay of the same quality, which he fed to his horse without any ill effects, but it was found that his horse rejected the weed entirely, picking out the hay and leaving the weed among the orts. I have known but few instances where I supposed horses were injured by this weed, or where they rejected it entirely, although I have known such hay fed, with suspicion, ever since the above date.

The Horse-tails are what botanists term *cryptogamous*, or flowerless plants; having no true flowers, with stamens and pistils, but producing and multiplying their kind instead, by means of spores. This species presents two forms, which ordinary observers would decide as being two distinct varieties or species. One of these forms are simple stems, hollow, grooved, of a light brown color, and have at each joint or node, a sort of sheath of a darker color, and rises from the ground early in May, usually. On the top of these stems is a head, shaped somewhat like a pine cone, made up of scales similarly, which, like the pine cones, bears its spores on their inner surface. These spores are very curious, as observed under a microscope, and present a very interesting study, as they are quite sensitive to outside influences. These stems shed their spores when perfected, and afterwards the barren plants appear, growing six to twelve inches high. It is these which we gather in our hay, principally, and are too well known to need description.

Gray, in his Manual, says it is natural to damp grounds; but in this vicinity it is found the most flourishing near the high banks of the river, where the soil is the dryest in the meadow.

Another remarkable fact connected with feeding this weed by my father, was, that at the usual time of sowing soft turnips, the fall following, he applied the horse-manure made from feeding this hay, to a square patch in the home-lot, on the whole of which the horse-tail came in thick, and although the ground has been cultivated with a view to its extermination, it remains about as thick as at first. The soil is a light sandy loam, with a yellow porous subsoil, and is dry upland.

Although this weed has been fed many years since, I do not recollect of its affecting any other animal, nor have I known of any other instance where it has been brought in by the application of the manure made from animals fed on the horse tail. Perhaps it may be owing to its not being applied till it had passed a fermentation. W. H. WHITE.

So. Windsor, Conn., Sept. 6, 1869.

For the New England Farmer.

DEEPER OR BETTER PLOUGHING.

As the time has come for the diplay of the skill of our ploughmen at our annual Fairs, and as the subject of ploughing is always in order in agricultural papers, permit me, by way of introduction to a few remarks, to call the attention of your readers to an article published in the weekly FARMER of July 31, by P. C. Thayer, in regard to deep ploughing, and ask them to weigh well the questions he has put in relation to his turning six or eight inches of yellow, or "free soil," as he calls it, to the top.

Now, Mr. Editor and brother farmers, I am going to give you a few of my ideas about it, and ask a few questions at the same time. In the first place, he says he heard Horace Greeley say an acre of soil one foot deep would produce as much as two acres six inches deep, and an acre two feet deep would produce as much as four acres six inches deep. When we go to Fairs and hear men give us a lecture upon farming, we ought to take heed how we hear and how we understand. I am aware that many people, when they hear a man of great abilities make a speech, go away with the idea that he knows all about it.

I don't know Mr. Greeley, but I have read some of his writings. I think if he had seen the land Mr. Thayer ploughed up, he would have doubted the wisdom of his advice, or of its being followed as Mr. Thayer did. If he would advise ploughing so deep all at once, then I must say that either he or I have a great deal yet to learn about farming.

Mr. T. asks if he has committed a blunder in turning up six or eight inches of yellow dirt. I think it is not such a blunder in his case as it would have been with most farmers, and on very poor land. Having had four coats of manure before and one since, it must be in a much better condition to recover from the effects of the ploughing, than if it had had none at all. He says his neighbors laugh at him, but none of them recommend any remedy, though they agree that it will prove a great injury. I don't see much to laugh at. We are all liable to errors, one way or another, and the best way is to correct them as soon as possible. I should anticipate that stirring the subsoil thus deeply at once would be likely to cause the soil to be porous and leachy. I would recommend putting on liquid along with

the other manures; likewise to try a dressing of salt and soot mixed, if it can he had.

Most farmers have some very poor land, and if they go to ploughing as deep as Mr. T. has done, because Mr. Greeley said so, it would take them half as many years as they ploughed inches deep to fetch their land up to a profitable state for cultivation. Farmers in this country plough up pieces neither round, square nor oval, and all the way from half an acre upwards, commencing at the outside of the piece, going round and round, and forming a dish in the middle. How would such a piece look if we commenced sixteen inches deep?

By ploughing fourteen to eighteen inches deep, manuring heavy, and pulverizing well, we might get a heavy growth of grain and grass, mammoth pumpkins, squashes, turnips, potatoes, &c., but our grain and grass would be likely to be laid flat, and our vegetables deficient in quality. But are these the crops farmers find profitable? Rusted straw, shrivelled grain, half rotted grass, and coarse vegetables are far from desirable.

I have an upland farm of 700 acres, and you will believe I have a variety of soils—some deep and some shallow—but I would not have a foot of it ploughed deeper than from seven to nine inches. On portions of my farm it would be amusing, I think, to see any of these great speech-makers take a plough and plough over three inches deep. Me thinks I see the plough jumping one way and their legs going another, as the implement worked its way among the stones. But for all that, I get good crops of grain, and grass of first quality.

When people advocate such deep ploughing I think they are beginning at the wrong end. It would be more sensible to recommend a better mode of ploughing; to plough more thoroughly before we plough more deeply. What is more unsightly than a nice, smooth meadow, filled full of ridges by bad ploughing? Such fields are not only unsightly, but they are an impediment in the way of the mowing machine. There is no excuse for such work. I have seen but very few pieces of mowing since I come to this country that could not be greatly improved by commencing at the proper place to plough, and finishing off accordingly.

I will bring this scribble to a close, by repeating what some of your correspondents say: "More practice and less theory," "More brains," more light, and better judgment in farming. E. Hebb.

Jeffersonville, Vt., Sept. 1, 1869.

Killing Apple Worms by Machinery.—"Place early in June *rags*, not hay-bands, in the forks of the tree, or trunk, below the lower limb, and in these the larva will secrete themselves to enter the chrysalis state. Once in two weeks remove these rags, and destroy the insects. Mr. Brown does it very quickly and effectively by passing the rags through a clothes-wringer. In this manner he believes the nuisance may be got rid of; and yet the effort will be useless unless every owner of an orchard does the same thing. There must be *united* effort. Let every man feel it his duty to urge his neighbor to act at once and persistently, remembering that 'eternal vigilance is the price of'—*good fruit.*"—*American Entomologist for July.*

AGRICULTURAL ITEMS.

—Equal parts of laudanum, alcohol and oil of wormwood make an excellent liniment for bruises, &c., on man or beast.

—Mr. Griswold, of Vermont, paid $3000 for the Short-horn bull 14th Duke of Thorndale, when a calf. He recently sold him to Mr. G. M. Bedford, of Kentucky, for nearly $6000.

—The *Gardener's Monthly* complains that books on vegetable physiology are very much behind the age, and regrets that there are not more students in this interesting branch of science.

—Broom corn brush is selling in the central part of Illinois at 20 and 25 cents the pound. The expression, as "cheap as a broom" is likely to lose something of its original force.

—Fifty-five kind-hearted farmers turned out last week near Lansing, Iowa, and cut, bound and shocked sixteen acres of wheat for the widow Guilee, whose husband had recently been killed by the kick of a vicious horse.

—A monument lately erected in Winthrop, Me., to the late Dr. Ezekiel Holmes, was dedicated September 9. The address was by Dr. N. T. True of Bethel, who remarked, "For the first time in the history of our beloved State have public honors been rendered at the grave of any of her citizens whose life was devoted to the science of agriculture."

—A correspondent of the *Maryland Farmer* says that if farmers will look around they will find as large blackberries growing on their lands, as those sold by nurserymen at $3.00 to $5.00 per dozen. He has one plant in his garden which cost $3.00, and the berries are no larger than those on bushes dug from his waste lands. It is his practice to tie a string or mark around plants bearing the largest fruit in July or August.

—E. P. Savage, of Clinton, Iowa, raised last year from a bushel of Early Goodrich potatoes four and a half bushels of miserable, knotty, small potatoes, and acknowledges that he said hard things of the variety, but thought he would give them another trial. This year the quality is equal to any of the twelve varieties on his farm, and he estimates the yield at 400 bushels per acre.

—The *Canada Farmer* says that the natural course of vegetation does not exhaust, but rather enriches the soil, by eliminating plant food, and

restoring it to the land in decayed vegetable matter. It is the artificial method of growing crops and *removing* them entirely from the land, without any return, that exhausts or impoverishes.

—A correspondent of the Cincinnati *Times* says that the following recipe will preserve garden seeds and all kinds of grain and seeds from the ravages of cut worms, birds, &c. One pound sulphate of iron, one pound aloes. Dissolve in water heated to 90 or 95° and pour over one bushel of grain, and in a similar proportion for a greater or lesser quantity.

—The *Horticulturist* says that if a fruit grower has a muck bed within reach he is fortunate. For all light or loamy lands, the application of a hundred or more loads per acre of well-prepared muck, is of the most beneficial character. It should be exposed to the air six months or even a year before it is applied to the soil, and composted meanwhile with lime, unleached ashes, or fish guano.

—Mr. L. B. Arnold gives the *Country Gentleman* a marked instance of the fact that odors inhaled by dairy cows will affect the milk. In June he lost a calf, the carcase of which was placed where northwest winds carried the stench over his pastures. It was soon found that the milk was tainted, and was tainted or pure as the wind changed. The cause being traced and removed the trouble ceased. In another case dead horses in the cow pastures caused serious loss to all the patrons of a cheese factory.

—Leander Smith, a veterinary surgeon of St. Louis, Mo., expresses the opinion, in the *Journal of Agriculture* of that city, that glanders cannot possibly be produced in man. He says that when he was a student he knew a German chemist to repeatedly inoculate himself with the virus of glanders taken from a horse discharged as incurable, yet the chemist suffered no bad effects. He believes that in all cases the sickness and death of men supposed to have been the glanders was caused by some other disease. He believes that glanders are confined to the equine race.

—A correspondent of the *Prairie Farmer* says, gather your apples early if you wish to keep them late. Gathered early, they are hard, and it will be sometime—several months—before they will have reached the period of ripening which the ripe apple attains on the tree; so that to pick early, is to put off the ripening time. For very late keeping, gather four weeks before ripe; if wanted for spring use alone, and not early summer, pick a week later; if for February and March, a week later still. Pick your fruit; and from the tree put into the barrel, to be no more touched till used. Handling fruit hastens decay.

—Mr. N. Voss, of Waukegan, Ill., writes to the New York Farmers' Club, that he has succeeded in obviating some of the unpleasantness of a privy by not having any depression below the surface, and placing straw on the ground, which absorbs the moisture, and can easily be removed with a fork once in two or three weeks, with less work than cleaning after a single horse or cow one night. And but very little odor is emitted at any time; nor is it attended with trouble or expense, especially on a farm. The daily addition of a small quantity of dried muck or soil would be an improvement.

EXTRACTS AND REPLIES.

SEEDLING APPLE TREES.—TAP ROOTS OF.—SEEDS OF EVERGREENS.—CULTURE OF HEDGES.

Will you through your valued journal, tell me how to manage with 400 or 500 little apple trees, growing from seed planted this spring? Ought I to take them up and keep them in a cellar this winter?

When transplanted, shall I *cut the tap roots or not?*

When should evergreen seeds (hemlock) be gathered, and when and how planted?

Should I not get a better and more even hedge by raising seedlings, than in any other way? How long ought it to take? S. B. K.

Providence, R. I., Sept., 1869.

REMARKS.—Let the apple trees remain until next spring; but if the soil in which they stand is quite moist, mulch them thoroughly with hay, straw, corn buts or branches of evergreens, or the frost will be likely to throw them partly out of the ground.

Transplant into nursery rows next spring, or into the places where you wish them permanently to stand. If we were about planting another orchard, we should take the latter course, and *preserve the whole length of the tap root*, although it is often as long as the tree itself. What is the office of the tap root? Is it not two-fold, to keep the tree firmly in its place, and to find nutriment, especially in seasons of drought? Why, then, is it cut off? In order to save time and labor.

The spruce ripens its seed in the fall, and we suppose the hemlock does also. The evergreen seeds are poor keepers, and should be planted soon after maturity. It is more difficult to raise evergreens from seed in our changeable climate, with its extremes of heat and cold, than in England. We would refer you to a work on "Evergreens," by Josiah Hooper, published by O. Judd & Co., or to Warder's "Hedges and Evergreens," and should be very glad to publish a fuller reply to your inquiries, which we solicit from some one better posted than ourselves on these subjects.

"HORSE-TAIL."

Seeing an invitation for more information on the effects of this weed on horses, I venture to give my experience with it. I have seen it in many of the valleys of the principal rivers in New England, and in hundreds of other moist and wet places. My attention was first called to it seventeen years ago, by Mr. D. D. Clark, of Concord, N. H., who lost a fine horse that exhibited all the symptoms of being poisoned. On making an examination of the hay it was found to contain much of this

weed. Remedies were administered, but the horse died.

At that time I had two horses, one of which sickened, refused to eat or drink, became stupid, giddy, staggering; muscles rigid, and in a few hours the animal became as inflexible as a statue and died. The other horse would pick out the hay and eat it, and leave every stock of the horse-tail untouched. I have seen other horses reject it.

Prof. Hayes says he found nothing poisonous in it. But that does not prove that it will not kill a horse. This plant may not be injurious to all horses. In localities where it is abundant, colts may so far habituate themselves to it that they can eat it with apparent safety, as a man by use can eat opium enough in one day to kill several men who had never used it before. I have long believed that the bad condition in which we see many horses in the spring of the year is in a very great measure owing to this noxious weed being mixed with the hay. The old saying, "What is one's meat is another's poison," may apply in this case. Some horses may have a constitution and a power of digestion, sufficient to overcome its deleterious effects. But it will require more than one analysis to prove that this plant is not injurious to some horses. Thousands of farmers and other people feed hay to their horses that they *know* is mixed with this unwholesome weed! I have heard them say, "Well it never killed any of my horses!" If not it was acting as a *slow poison* and in time would tell to disadvantage. All the science in the world cannot make out but what this plant is destructive to the horse—*poison!* Is there an antidote? My experience convinces me that a perfect one can be had by the use of "water pepper," "smart-weed," —*Polygonum Hydropiper*. I have known several valuable horses cured by giving them smart weed, —all the horse would eat, green or dry. Now is the time to cut it. Don't wait till the frost destroys its virtues. It should be cured like hay. Give your horse a pound of it every week, and you will find him much benefited by it. I should almost as soon think of keeping a horse without oats as without smart weed.

There are several other plants beside horse-tail that are poisonous to horses. Among which are Water Hemlock (*Phellandrum*) (*Cicuta?*) Black Bryony, (*Tamus*) and Yew-tree, (*Taxus*). For the last three poisons use smart-weed and powerful catharties. DR. BOYNTON.

Lawrence, Mass., Sept. 6, 1869.

THE GROWTH OF PLANTS.

EDITORS OF THE NEW ENGLAND FARMER:—The following interesting item has been going the rounds of the press this summer:—

NOVEL BUT TOO EFFECTIVE METHOD OF RAISING BEANS.—Down East a new and cheap method of raising that important article, the bean, has been discovered. To save poles, sunflower seeds were planted with the beans. The sunflowers came up first, and the beans in time twined beautifully around the stalks. But the sunflowers beat the beans at growing, and soon literally raised the beans, roots and all, high and dry, from one to five feet above the ground.

After I had enjoyed the reading of this several times, it occurred to me to test its truth. Selecting a thrifty sunflower in my garden, I tied a string round the stalk just above where a leaf grew out, so that it could not slip, and attached a stick just swinging clear of the ground at its lower end. Since then the sunflower has grown about three feet—has got its full growth, in fact—and yet the stick has not been raised in the least. But if the sunflower stock did not go up at that particular point where I happened to tie the string, why should it at any other point; or, in other words, how could the beans, in the above story, be pulled out of the ground?

This story, however, had reminded me of an old query. When I was a boy and lived on the banks of the Saco river, I used to hear the comparative heights of memorable freshets settled by reference to spikes driven into trees growing by the river's edge. I asked if those spikes in thrifty trees might not be carried above their original height from the ground, but my father and all the old river men said no. I confess, however, that I always had my doubts. But if the law of growth in sunflowers and trees is the same—and why shouldn't it be?—this little experiment would seem to prove that my father and the river men were right, and that the above bean story is a humbug. C.

Boston, Mass., Sept. 7, 1869.

REMARKS.—With opportunities for watching the growth of trees and other vegetables constantly before us, it is singular that such paragraphs as the above, and that other of a tree which grew up through the hole in an old millstone until it filled it and then gradually raised the stone from the earth and wore it like a crinoline about its trunk, should be sufficiently credited to obtain so general circulation.

A SICK COW.

Can you or any of your correspondents tell me of a remedy that will cure my cow? She became sick early last spring, and bloated badly from eating potatoes. She has now so far got over her sickness, that she eats well and appears well, with the exception of being bloated very badly every night. In the morning there is no appearance of bloat. In rainy weather, when she eats wet grass, she bloats worse than when she eats it dry.

Lunenburg, Vt., 1869. C. J. C.

REMARKS.—We know little of the proper remedies for sick cattle, but would suggest in this case to feed the cow on *cut feed;* that is, hay cut and mingled with a moderate amount of corn, oats, or barley meal,—adding a little salt three times a week. Old potatoes should be fed out in very small portions. We have known horses killed by eating them in the spring.

NORWAY OATS.

I forward you a sample of Norway oats, grown in a field of three acres which harvested 220 bushels of very heavy and clean oats. The seed used was direct from the proprietor and originator, Col. D. W. Ramsdell of Chelsea, Vt., and just 165 lbs. were sown. The heads are but a fair sample of nearly the whole field, and were cut at different stages while maturing. The two which are fully ripe contain 140 and 150 well-developed grains in each head. The green ones show the manner in which they grow. We found beside an ordinary yield that the grain stood up better than any of our common oats and that we could get as good a "stock" from them as from wheat or rye, which is a most valuable acquisition in any grain for farmers to sow.

Other parties have advertised Norway oats, both "white and black," and sold them as genuine seed. In Pennsylvania the swindle has been operated to some extent, by parties, I am sorry to say, who publish an agricultural journal, as well as by our own people here in Vermont. H. C. P.

Hartford, Vt., Sept. 7, 1869.

Please find enclosed a head of Norway oats, grown on my farm, that, I think, beats all you have pub-

lished in regard to them. I count 143 hulls or pods, and there are two grains in most of them, making nearly 286 grains on the head; and there are any quantity of heads like it. They are the genuine Norways, sown after a crop of potatoes with *no* manure this season. All crops look well except corn. The principal crop here, is potatoes for the factory. G. H. WATSON.

Lancaster, N. H., Sept. 7, 1869.

While visiting the farm of H. H. Sargent in Plymouth, Vt., last week, my attention was called to a field of Norway oats, from half a bushel, sowed May 12. There are from four to nine stalks from each seed. The average height from ground to top oat is four feet. Average number of grains to each head, as far as counted, was 175; in one head from a bunch of nine straws we counted 224 good oats, and 28 missing, as was seen by the empty hulls. Heads generally from eight to sixteen inches, though there were those twenty-two inches in length. All measured with a pocket rule, not guessed at. When threshed will report result.

Ludlow, Vt., Sept. 6, 1869. JAMES POLLARD.

BUNCH ON A HORSE'S SHOULDER.

What shall I do for a colt that has a bunch on the upper point of his shoulder blade. I expect it was caused by a bruise some six months ago.

Blandford, Mass., Sept., 1869. A SUBSCRIBER.

REMARKS.—Rub it daily with the hand, with the tincture of arnica. Get arnica blossoms of the apothecary, put them into alcohol until they are thoroughly soaked. Put twenty drops of this tincture into a wine glass full of water, and rub the bunch, and about it, for twenty minutes once or twice each day. Keep the tincture corked tightly, and have it always on hand, as it is the best remedy for kicks or bruises of any kind, of anything in our knowledge. It is also among the cheapest, as a half pint of alcohol, and ten cents worth of arnica will last a year or two if used judiciously.

WILD CHERRY LEAVES.

Perhaps you will remember of my writing you about a sick yearling, which I lost near this time a year ago. From the description I gave, you thought cherry leaves must be the cause. I have since moved into York State with my stock, where they browse daily on cherry leaves; and I think if they live through the fall, I shall be of the opinion that cherry leaves are good for cattle instead of poisonous. The cattle are now in good order. The cows give a good quantity of milk, and our butter is nice and of a rich color. Grass, as well as cherry leaves, grows here. I saved a single stalk which grew near my house, that measured six feet and seven inches. If the farmers of New England can produce a taller one, I hope they will measure it, and let us know. A. NILES.

Irona, N. Y., Aug. 23, 1869.

REMARKS.—The statement above would scarcely change our opinion with regard to the poisonous qualities of wild cherry leaves. People have been known to chew opium and swallow arsenic, and live many years afterwards, but when they increase the quantity too much, they suddenly die. And so it may be with cattle. Where the feed is good, they may take an occasional nip of wild cherry leaves, and suffer no harm; but if the grass is scanty and dry, they would be quite likely to eat sufficiently of the fresh and juicy cherry leaves to cause death.

"*Grass*, as well as cherry leaves, grows here," says our correspondent, and we think that is the reason why his cattle are not injured in their new pasture.

Our advice would be to cut down and cast into the fire every wild cherry tree on the farm, as they are a complete nursery for caterpillars, and are, without much doubt, poisonous to cattle, under some circumstances, which may not be well understood.

SWALLOW-TAIL BUTTERFLY—*Papilio Turnus.*

The worm you have just sent me from Mr. J. T. Lurvey, of Melrose, Mass., is the full grown caterpillar of *Papilio Turnus*, our large, black striped, yellow "swallow-tail" butterfly. Very truly,

SAM'L H. SCUDDER.

Natural History Rooms, Boston, Sept 13, 1869.

REMARKS.—We copy the following description of the *larva*, or worm state, of this species, from a publication by the Smithsonian Institute, entitled "Synopsis of the Lepidoptera of North America"—"green above, whitish below; sides with seven oblique, greenish stripes; between the fourth and fifth segments a transverse band, yellow before, black behind; on the third segment a lateral, ascellated spot, with two blue pupils; head flesh color, neck yellow; feeds on various species of *Prunus*." The two horns or feelers, which particularly attracted the attention of Mr. Lurvey, are noticed as "two retractile tentacles protruding from the first segment." The perfect insect or butterfly measures from three to four inches across the wings, and is found in the United States generally.

NORWAY OATS.

I have a small lot of the "Norways," one head of which I send you, which according to my count contains 175 oats and measures fifteen inches. As many as nineteen stalks have sprung from a single oat, the straw of which is from four to six feet in length. F. G. B.

Rutland, Mass., Aug., 1869.

REMARKS.—Our correspondent's measure of the head of oats received is correct, and we presume his count is also. A fine head of grain.

We have also received from "A Subscriber to the Eleventh Commandment," Whitefield, N. H., a handsome head of white oats, eleven inches in length, and well filled.

MANURING IN THE FALL.

I have a lot of manure in my barn cellar, just as it was dropped from the stable through the scuttles. It is mixed with an equal amount of loam, used as an absorbent. The horse and the cow manure are separate.

Now suppose after harvesting, I spread this manure on my corn ground, and plough it in three inches, will it not thoroughly ferment and become impregnated with the soil? Where it now lies, it is not *wet*—only *damp*, and lies up light, and I had the impression that the horse manure would be-

come *fine* in the soil, without throwing over and refining before spreading; and that where both horse and cow manure were spread, the soil in spring would be in excellent condition for corn again. J. W. SNOW.

Cumberland, R. I., Aug., 1869.

REMARKS.—You are precisely right, according to our ideas, in regard to using green manure in the fall. If ploughed under in the most crude condition, it will undergo a slight fermentation, and the escaping gases will be absorbed and retained by the soil. It will make the land rich and light, and place it in the best possible condition to feed a crop the next season, so far as the manure is concerned. It is, probably, the best possible way to use manure.

NORWAY OATS.

In a late number of the FARMER, I read your description of a fine field of Norway oats; three heads of which contained respectively seventy-five, seventy-nine and ninety grains. On which I went to a piece of my oats of the same variety, and selected three heads that gave 240, 229 and 217 grains each. Then I selected five heads, all from one seed, with the following result,—155, 214, 226, 219 and 237 grains, which make ten hundred fifty-two grains, all from one seed. G. P. HIBBARD.

East Brookfield, Vt., Aug. 23, 1869.

SWEDEN OATS.

A friend of mine gave me a handful of oats—less than half a pint—which were brought from Sweden last season. I sowed them about the first of June, on land that was not highly manured last year and *not at all* this. Enclosed find a head of oats raised from that seed. It has 110 grains, if counted correctly. Many other heads have as many. The average growth of stalk is four feet. Have not harvested them yet. If I live another year you may expect to hear from them again.

Temple, N. H., Sept. 6, 1869. DANIEL FELT.

REMARKS.—Head full thirteen inches in length. It is a white oat of very fine appearance.

BLACK-LEG.

In the FARMER of July 17, (Monthly, page 413,) I read a communication upon black leg that was of interest to me, as I had just lost a calf by that disease. And having had a little experience since then with the disease, I send the following statement to you, thinking perhaps it may be of interest to some of the readers of your valuable paper.

About two weeks after losing the calf above referred to, another was taken in the same manner, lame in one hind leg. I immediately upon the discovery of the attack, made an incision through the skin, and slightly into the flesh of the thigh, of some five or six inches in length, and filled it with fine salt and sewed it up. In about six hours the lameness had decreased in the hind leg, but he was lame in one fore leg. I then performed the same operation on the shoulder, after which for two or three days he seemed to be doing well, and had nearly recovered from his lameness, when the other fore leg was taken lame. I then cut a smaller gash in this shoulder, treating it the same; but in twelve hours after he was much worse, being so bad he could hardly touch his foot to the floor. I then made a longer and deeper cut, and found the flesh quite dark. Into this I put all the salt the wound would contain. This has effected a cure, I think, as this was five or six weeks ago, and the calf is now in a thriving condition, and to all appearance quite well.

The cause of the disease in this case, it appears to me, could not have been any sudden change in flesh or condition, as there was no such change. In both cases the animals were in a fair thriving condition. I attribute it to their drinking muddy water, as they had been under the necessity of drinking that or none for some time. I have been told by others since then, that drinking muddy water would produce black-leg. L. JONES, JR.

Dover, Vt., Aug. 30, 1869.

ATTLEBORO' FARMERS' CLUB.

Subject discussed at the session of September 6, held at Charles Hayward's—*Improvement of Dairy Stock.* George Pierce, President, remarked that there are between 800 and 900 cows in town, and the greater part are comparatively inferior. Can some one mention some way in which each cow can be made to give at least one quart per day more, and so add over $8000 to the income of the town in one year.

Mr. S. M. Stanley thought that more than one quart per day can be gained by better feed and care.

Mr. C. Hayward said that in addition to good care, you must have good stock. In order to get good stock, we must select the best breeds, and then breed from the best animals of that race.

H. K. W. Allen remarked that as far as his experience goes, he has found the Alderney or Jersey to be the best stock for butter; the Durham for beef, and Ayrshire for beef and milk. It was decided that the Ayrshires were best adapted to the wants of the farmers of Attleboro'.

Mr. Wetherell, of the *Boston Cultivator*, addressed the meeting on this subject, and gave the farmers some very useful and important information.

The meeting was then adjourned for two weeks to meet at the farm of S. M. Stanley, Monday, Sept 20th at 1½ o'clock. Subject "The Art of Farming." J. E. HUNT, *Sec'y.*

SUDDENLY DRIED UP.

I have a three-year-old heifer which has been giving about a pail of milk to a milking, until a day or two since, when she suddenly dried up to about half a pint to a milking. She eats the same as usual; chews her cud and seems perfectly well. Can some of your readers tell me what is the matter, and what is good for her, and oblige a subscriber. E. W. K.

Stoughton, Mass., Sept. 1, 1869.

REMARKS.—We can scarcely conceive of such a sudden change, and are entirely at a loss to account for it. Who can tell?

POULTICE FOR DRY AND HARD HOOFS—DRAFT FOR FEET AND LUNGS OF CHILDREN.

A subscriber in East Taunton wants to know what to do for his horse's feet. I should not use cow manure—think it will create more fever, but would make a poultice of corn meal and soft soap, bind a quantity while warm all around the hoof, top and bottom. Let this be on over night or longer; it will soften the foot the best of anything I know of. If the heels are contracted, there is a patent shoe, made like any shoe except a small lip or spur turned up on the inside near the heel (each side) and the shoe made weak a little back of the toe cork on each side. The shoe is now nailed on and then spread with a pair of tongs a *little;* do this while the hoof is soft; and in a few days a *little* more. Don't spread too much at a time. After you get the hoof soft, keep it so by keeping him off the hard floor.

And I may as well say here that a poultice made

of soft soap and corn meal with a little water, and in severe cases a little mustard, is one of the best drafts for the feet or lungs of children. Mothers, try it on your little ones when they have a good deal of fever and cough, so you "can't sleep of nights." Put the drafts on feet and breast. Don't put in but little mustard, so they can keep it on all night. It is well to oil the bottom of the feet and across the lungs first with hen's oil, or lard is very good. N.

Fairfax, Vt., Aug. 22, 1869.

ACCOUNT WITH A BARLEY CROP.

While harvesting their own crops, farmers like to hear how others have succeeded. And possibly some readers of the FARMER may be interested in the following statement of the cultivation and yield of a crop of barley on a hill farm. I kept an exact account of every item of expense, &c. The field measures sixty-two rods, and was broken up and planted to potatoes last year. Nine loads of manure were applied to the land, but as I think manure properly applied will serve for three crops, I charge the barley with one-third of the value of the manure.

BARLEY FIELD.	*Dr.*	
To one-third of nine loads manure at $1.00	$3.00	
Ploughing and harrowing ½ day, span horses, at $3.75	2.50	
Seed barley, two bushels, at $1.75	3.50	
Sowing	15	
Cutting and raking	1.50	
Getting in	75	
Threshing, three days, at $1.25	3.75	
Cleaning up	75	
Interest on land at 6 per ct. on $20 per acre	45	
		$16 86
BARLEY FIELD.	*Cr.*	
By 21½ bushels barley, at $1.25	$26.87	
Straw	5.00	
		$31 87
Profit		$15 51

GEORGE H. PIERCE.

Marlow, N. H., Sept. 6, 1869.

BAROMETRIC SPRING.

A never-failing spring of pure soft water on our farm not only supplies a refreshing drink to the stock, but is a perfectly reliable *rain prophet*. Without any fee by way of bribe, or any incantations, or *any known procuring cause*, it overflows with a sudden rush, and within thirty-six hours thereafter, there comes a rain fall. Summer and winter, in wet seasons and in the severest drought, it never fails to give its seasonable premonition.

The hidden arteries which supply this spring have been traced to some rocky highlands, with swampy intervales, a fourth of a mile from the place of out-flow. The main artery has been tapped by a well thirty rods from the spring, and found to be twenty-four feet below the surface. The well, like the spring, is never dry.

In wet seasons, the spring sends forth, on the average, a stream sufficient to fill an eight or ten inch pipe. After running about one hundred rods, this stream loses itself in a swamp. In the dry season, this stream loses itself in a course of about fifty rods. It diminishes in volume regularly, as other neighboring springs do, with the progress of the summer, or a drought,— except as already indicated.

During the last week of August, and the first four days of September, the water diminished rapidly, scarcely enough flowing to fill a two-inch pipe. On Sabbath, Sept. 5., the stream was unusually sluggish, reaching only about forty rods from the spring. Monday morning, the 6th, it was pouring forth, having more than doubled in volume, and filling its channel for a distance of not less than eighty rods. Tuesday noon, as I write this, the blessed rain is falling copiously, and my little spring has, for perhaps the thousandth time since our acquaintance began, proved a true prophet.

Here are the facts, who will explain the cause?

J. H. TEMPLE.

Framingham, Mass., Sept. 7, 1869.

SALTPETRE FOR BLOODY MILK.

I have a heifer that gave bloody milk six weeks or more this season. There was no trouble with the bag that I could see or feel. I gave her saltpetre every other day most of the time, while the milk was bloody. Her milk is all good now.

Westboro', Mass., Aug. 29, 1869. W. S. GROW.

"G. W. C.," BERWICK, ME.—Our correspondent is informed that the condition in which he finds his cow is not an uncommon one, but one for which no remedy is known. We have known some in heat so often, and always barren, that they were utterly worthless as dairy cows.

AGRICULTURAL ITEMS.

—An experienced Iowa wool-grower gives $1.50 as the probable average cost of keeping a sheep a year in that State.

—Capt. F. Randall, of Lyndon, Vt., reports a hill of potatoes in his garden in which the tops are covered with tubers and none in the hill—an exhibition of nature reversed.—I. W. S.

—A premium of $60 offered by the Massachusetts Horticultural Society for the best seedling pear, has been awarded to the variety known as the Clapp's Favorite, after a trial of five years.

—The apple crop of Michigan this year is abundant in some places and very light in others. Orchards which have been kept in tillage are more productive than those in grass. The present crop of pears is said to be the largest ever produced in Michigan.

—The Massachusetts Agricultural College opened its fall term September 3, with additions to its corps of instructors of Captain H. A. Alvord, of the United States Army, as Professor of Military Science; E. H. Barlow, of Amherst College, instructor of rhetoric and elocution; and Dr. A. S. Packard, Jr., of Salem, leading lecturer on entomology.

—A correspondent of the *Maine Farmer* says that for the two last seasons he has been using wooden boxes lined with slate, for packing butter, which answer a very good purpose and have many advantages above anything that he has ever seen. The boxes can be made of any required size. The joints can be made water tight, they are very cool, easily kept clean, and free from any risk on account of breaking.

—Mr. S. D. Lewis, of Rock County, Wis., writes to the *Prairie Farmer* that he bought a perfectly white, thoroughbred, three-year-old Short-horn heifer, of the W. R. Duncan stock, in spring of

1864. She did well as a milker the first season. In 1865 her milk was measured and her butter weighed. She calved April 20, and from that time till October 10, she averaged thirty-seven quarts of milk a day, and fourteen one-half pounds of butter per week; and from October 10, to March 1, 1866, when she was allowed to go dry, she averaged twenty quarts of milk a day and eight pounds of butter per week. In good condition she would weigh about 1700 pounds.

For the New England Farmer.

NEW ENGLAND FAIR AT PORTLAND.

The sixth exhibition of this society has been held, and each State represented in its organization has had the honor of having one of its Fairs within its limits. It is not my intention to attempt at this late day a detailed report of the late fair, but simply to indulge in a few reflections or criticisms.

Whenever a society holds its fairs in different places, it is expected that the members living in the locality where it is held will make special exertions to have their section of country well represented. And when it came to the turn of the largest and best agricultural State of the six, there was every reason to believe this fair would excel all preceding efforts; that the earnest co-operation of the Maine State Society would have made this a grand exhibition of the agriculture of New England; that visitors from other States would have a fine opportunity for seeing the products of Maine and comparing them with those of their own localities.

But in this hope we were disappointed. The contributions of Maine, excepting in horses, would not make a respectable county show, and the exhibition, as a whole, was not what many had been led to expect. Massachusetts contributed to all the departments; Vermont and Connecticut, considering the distance, did very well in the stock department, while New Hampshire and Rhode Island sent very little. It was a noticeable fact that the bulk of the stock belonged to a few individuals. Why some animals were sent, it was difficult to decide, unless it was to swell the number of the herd, or on account of some secret or hidden excellence. However, there were many valuable animals upon the grounds, and their owners deserve credit for the time, money and care they expended, and the risk incurred in bringing them thus before the public. It is pleasant and highly instructive to look at and examine the different breeds, side by side. More can be learned in a few hours by such ocular demonstration than can be gathered from reading pages of descriptions and theorizing.

The more we see of the different breeds, the more thoroughly are we convinced that the Ayrshire is the type for the greater part of New England; while the Shorn-horn families may be preferable for the Connecticut valley and a few other favored localities. The Jersey may rightly be called the gentleman's cow, and probably will continue to be popular in towns and in small rural residences where only one or two cows are kept and where they receive the best of care and keeping. There is a happy medium in the size of all our domestic animals, below or above which it is not profitable to breed. The smallest and most compact structure by which the desired end can be attained, is the best. None will deny this proposition, where work is the leading object. Of two cows of unequal size, but giving the same amount and quality of milk, I should prefer the smaller. There is also as surely a limit, where beef is desired. One could not help noticing the crowds that collected around the fat oxen of monstrous proportions, while fat animals of ordinary size apparently attracted little or no attention. In one of the FARMER'S weekly reports of the Brighton market, last spring, the sale of several of the overgrown and extra fat beeves was noted. Their owner came to market with an apparent air of satisfaction, fully persuaded he should receive extra prices, when, after much parleying, he was obliged to sell for one or two cents per pound less than was paid for smaller oxen. Too much tallow and bone to cut up to a profit was the butcher's objection. A bullock dressing about one thousand pounds is the most profitable to retail.

In the sheep pens, three classes were well represented, the Merinos predominating in numbers. Whatever may be the quality and quantity of wool a sheep will produce, it is evident, since it can be so easily transported long distances, there must always be a sharp competition with foreign importation. Something, therefore, besides great wool-producing qualities is needed here, in close proximity to large markets. Thin, lean mutton is, at best, dry picking. Merinos are not popular with butchers. The long wools, like large cattle, are only adapted to rich pastures; hence the middle wool families are likely to return the highest profit in New England, in the long run.

The show of swine was very small in numbers, but was meritorious in quality. No animal improves faster, under careful management, than the hog, and it deteriorates, with equal rapidity, from neglect and injudicious treatment. Since pork has been produced at the West in such quantities and at such low rates, and since the horse, the ox, sheep and even poultry have received so much attention, the porcine race has fallen into the background, and it is confidently affirmed by many that there were better hogs twenty-five years ago, upon our farms, than the average found on them to-day. It was gratifying to meet at the pens a gentleman who has lately entered the arena of stock-breeders, and is making the hog his specialty,—Dr. Calvin Cutter, of

Warren, Mass., author of a work on physiology. The Doctor had numerous specimens of his stock with him, and was untiring in answering questions of the most inquisitive. One of the leading objects sought by him is early maturity, as he believes the profits of keeping swine in this rough, cold climate must be made during warm weather.

Too many American stock-breeders engage in the business for recreation or mere speculation. Having acquired fortunes in other pursuits, they have only a general knowledge of what they undertake, and do not give the personal attention to it which it should receive, but trust all the minutia to others. They enter upon the work suddenly, spend money lavishly, and after awhile leave the business as abruptly, and accomplish comparatively little good. For the improvement of our domestic animals, men are needed who have not only the requisite knowledge, but a taste and love for the business which shall claim much of their time, and a firmness of integrity that shall not only refuse to breed from animals with any blemish, but to sell them to others for such purposes, though solicited to do so.

As might be expected, where a society bestows the major part of its funds upon horsemen, the show in that department was large. Many noted animals were upon the ground and we anticipated a rich treat at the stables. Approaching the first, it was locked; the second was locked; third ditto. Finding that peeping cracks and grated windows didn't pay, we directed our steps to any place where we saw a crowd, which indicated an open door. The stables of Gen. Knox and a few others were wide open, and the attendants courteously answered all questions; but four-fifths of the stables were securely locked, and it was only by chance that even a glimpse of their occupants could be obtained. Now if it is right to lock up the horses from public gaze, why not lock up the cows, sheep and swine? All visitors have not whole days to spend upon the grounds, and what they see must be seen quickly, and is it unreasonable that they claim access to everything upon exhibition?

The exhibition at the hall occupied twelve rooms, two of which were large halls, and so far as space and convenience of arrangement were concerned, they were all that could be desired. But where were the products of the large orchards, dairies, and grain and potato fields of Maine, or of the gardens around Portland and other cities? They should have filled the two largest rooms at least, and crowded the merchants and mechanics into the smaller ones. Do not farmers come to these fairs to see and compare the products of their own labors? Are not these Fairs called agricultural? Why then allow merchants and manufacturers to monopolize the apartments to advertise their wares? Upon this occasion all the vegetables, grain and products of the dairy were consigned to the darkest and smallest of the twelve rooms, and one table in another held all the fruit! The display of flowers, though not large, evinced careful culture and good taste in their arrangement.

The show of potatoes indicated there were present at least two gentlemen who are making this vegetable a study. The specimens of the grower from North Berwick, proved that he knew how to grow potatoes, and his readiness to impart information was particularly gratifying.

There was one feature of the show new to the writer,—the display of the bakers; several of whom presented large and varied assortments. There is no doubt that baking can be done cheapest in large establishments; and if bakers would only use better stock and less chemicals their customers would increase, especially during hot weather. Anything that can be done to encourage the meritorious bakers confers a favor upon the public. And why should not our agricultural societies give greater attention to this branch of domestic economy?

When the winners of prizes, whether for stock or implements, parade their laurels, the thinking man will inquire, Under what circumstances were they won? How great was the competition? The Dutch stock, for instance, has been at several fairs and received as many premiums, there being no other competitors of the kind. How could the committee do otherwise than award them a prize? The same may be said of the few Kerry cattle present upon this occasion, With the Jerseys and Herefords, after dividing the number present into the different classes, and allowing three prizes for each class, the competition was by no means sharp, nor were the labors of the committee perplexing. If there were twenty, thirty or fifty animals competing for a single prize, as at some European fairs, then the successful winner might well exult over his triumph. A prize under those circumstances would be worth contending for, and fairs would well repay breeders for going many miles to attend.

N. S. T.

Lawrence, Mass., Sept. 14, 1869.

For the New England Farmer.

HOURS OF LABOR ON THE FARM.

The conclusion of Judge Colburn upon this subject, given in the FARMER of July 31st, does not appear to be applicable to all localities. The farmers of Vermont are highly favored, if they can support themselves by working fewer hours than mechanics. The fact speaks well either for their skill as husbandmen, or for the fertility of their soil.

Would that farmers throughout our land could earn their living by laboring upon an average eight and three-quarters hours per day during the warm season, and not more than an average of eight for the whole year. Then would their occupation assume a different

aspect; it would be more attractive to the young, and the aged would have less reason to complain of its unremitting care and toil; while all could experience in a larger measure the ease, comforts, and pleasures which agricultural orators and poets are wont to associate with rural life.

A few years ago farmers and mechanics were everywhere upon about the same level, as regards the number of hours that constituted a day's work, and as to the severity of the labor. In those days carpenters hewed timber, planed boards, made doors, blinds and windows, and got out all the finish by hand; consequently the trades then required strong men and long days, and young men did not leave the farm to find lighter work in them. But since the universal application of machinery to the arts, mechanics have gained great advantages over the tillers of the land. The steam engine, water wheel and horse power are doing the work that used to tax human muscle to the utmost; and mechanics are becoming mere tenders of machines,—the hardest part of which is the steady, close confinement to one thing.

With relief of severe labor, has come a gradual reduction of the time required for a day's work, until now, here in eastern Massachusetts, ten hours constitute a day for carpenters, masons, painters, machinists and laborers in brick-yards, and upon roads, &c. In the cotton and woolen mills and lighter employments, ten to eleven hours are required. Shoe-makers and hatters, who work by the piece, generally accomplish their tasks in eight to nine hours. Mechanics in governmental works are on duty only eight hours. These figures represent the extreme time. There is the usual preparing for work, and at its close cleaning up, washing, &c., to be deducted. This occupies fifteen to thirty minutes, so that mechanics do not really render their employers the above named periods of time. Most promptly do they obey the signal for quitting work. School-boys do not watch more closely the hour for dismission. Be business ever so pressing, or weather ever so favorable, all extra time is over-work, and is paid for at a high rate of compensation.

Upon every well regulated farm it is expected that the milking should be done, stock fed, working animals cleaned, breakfast over and all hands ready for the field by seven o'clock. One hour for dinner, or less, according to the press for work; then five hours more in the field, with supper about six, after which come the evening chores. Here are ten hours labor in the field, beside the regular morning and evening chores.

This is not a low estimate, for upon many milk farms, morning milking commences at five o'clock, and upon some as early as four, throughout the year. On market gardens about Boston, fifteen and sixteen hours are required of all hands working by the season. Day hands do not make as many hours, but these are only usually employed for fair weather.

Farmers lose no more time than carpenters or any other out-door laborers, on account of wet weather, and make as long days in winter; for, with modern farm buildings, there is plenty to be done during storms and extreme cold, in the manure cellar and tool-room,—cleaning and painting wagons and carts, cutting roots, hay and cornstalks, keeping all kinds of stock clean and comfortable.

There are some, and I believe Judge C. is one, who do not regard "chores" or barn work as a part of a day's labor. By what rule or principle they arrive at this conclusion, I do not understand. Certainly the followers of the various trades do not work two or three hours per day without compensation, however trifling the service rendered may seem. The moment the first blow is struck their time begins. The same rule should apply to farm hands. From the time of taking an implement in hand, their day should begin.

The advantages which mechanics now enjoy over farmers, are the chief cause of the scarcity and poor quality of farm help, and one great reason why farmers' sons are so eager to leave their homes and their fathers' occupation. Farmers have something to do to reach the ground now attained by mechanics. Every device which inventive genius can suggest to lighten the wear and tear of human muscle should be adopted. The days should be shortened as much as possible. But, oh, this is a difficult part of the problem. It will require a long time to bring about that harmony and concerted action we see among mechanics. If many plans have been proposed and failed, let us not despair, for perhaps Congress can, at a single act, settle this question and give the desired relief, since it has recently reduced the hours of labor for a large class of our citizens, and by a stroke of the executive pen decreed that they shall receive the same wages as when they wrought ten hours.

O, ye legislators, when ye come to our autumnal fairs to look upon your constituency and talk about the pleasures of rural life, the wonderful developments of our country, the great importance of an honest and intelligent yeomanry to a nation's welfare, and excite our vanity generally, tell us something new! Explain this labor question, if you please, and say why one class of our citizens should work only eight hours and still receive the same wages as those who labor ten upon the same kind of work; and show us farmers how we can accomplish as much for ourselves, our families and our country in a short day's labor as in a long one; or, in other words, how to manage our farms on the short time movement. Is not equality of rights the acknowledged main spring in legislation? and we desire to share equally in the toils and rewards

of labor, as well as enjoy equal rights in politics and religion. N. S. T.

Lawrence, Mass., Aug. 20, 1869.

REMARKS.—So far as we are acquainted with the rules in force at factories and shops, the "preparing for work" at the commencement of a day's work, and the "cleaning up, washing, &c.," at its close, spoken of by our correspondent as occupying from fifteen to thirty minutes, are not done in "working hours," but before or after the striking of the bell, or the blowing of the whistle, which marks the beginning and ending of working time.

For the New England Farmer.

WHEAT RAISING.

Reply to "John"—Sod Ground—Ploughing in Manure—Leaching and Evaporation—High Culture.

Your excellent correspondent "John,"—who doubtless has a surname which many of us would like to know, asks the question "sod land is good for spring wheat?"

My answer is briefly this. No time must be lost for the spring crop. Hence your "early corn land" will have but an insignificant green sward to plough in seasonable for the wheat, and I would recommend that it be ploughed in deep *late this fall*, when in full vegetation. Few of the gases from decomposition will be lost before the ground freezes. The freeze and thaw of winter mellows the furrows for shallow re-ploughing in the spring. Then use Stetson's harrow (the best grain coverer yet discovered) for putting in your fertilizer with the grain, two or more inches deep. Then roll, and I think your chances are good.

Harrowing in grain and half ploughing land, are prominent defects in the cultivation of wheat and other spring crops. The culinary garden is finely pulverized and highly manured —for what? To make the vegetable growth healthy and large. If you desire long parsnips, carrots, beets, &c., you spade or plough deep. I believe this is the true principle in field culture. I would rather bury my green manure six to eight inches deep than have it two inches under the surface to be drawn upon by the hot sun and the drying winds. I doubt the correctness of the theory of "leaching" and believe in the evaporation and exhalation of the gases from the surface. As they permeate the soil, or rise to its surface they nourish the roots of the vegetable. I endorse John's old farmer of ninety, who "ploughs in his manure."

I will briefly give a few facts, though I believe that each one must study and experiment for himself, and if we blunder on better results than those obtained from the teachings o the books or of "science," let us hold fast to that which we find best.

The past summer, I planted a small piece of corn on old land which was very mellow, spading in manure. Another piece adjoining was a stiff soil and the grass six to eight inches high. This was spaded down deep, with no other fertilizer than the sod. The old patch promised best early in the season, but when severe drought came, the grass plot stood it best and produced the best corn; the result, in my opinion, of the decomposition of the deeply buried vegetable matter, the heat and fertilizing properties of which tended to the surface. I also planted Hubbard squashes, using a weak compost of hen manure in the hill. Then by way of experiment I dug a deep hole and put in clear hen manure and covered it six inches with soil, in which I put a single plant. This single vine produced more growth of stalk and more squashes than six other vines, and withstood the drought much better. The ascending gases did the work, whereas if the roots had come in contact with the manure, it would have been almost instant death to the plant

The largest crop of winter wheat—forty-six bushels to the acre—ever raised in Massachusetts was on old pasture land, six miles from Boston. Pig manure was ploughed in. A portion of it lodged in a thunder storm, or the yield would have been over fifty bushels per acre.

How often, when manured in the hill, does corn stand stunted and yellow till the roots get away from the heating manure, and then it begins to grow green and rank. How much larger the crop, if this manure had been spread where all the roots, which are almost innumerable, could have caught up its enriching gases which make the "blade and the ear." Try an acre ploughed in with green manure and an acre dunged out in the hill, with equal quantities. Then another experiment may be worth trying. Put, say, thirty cartloads on *three acres*, in the hill. Then spread and plough in thirty cartloads on *one acre*, and see which will produce the most corn; counting the cost of the hours' and days' labor from the plough to the corn crib, and note the result. The same principle will apply to the grasses and all other farm crops. H. POOR.

Yonkers, N. Y., Sept. 20, 1869.

WHEAT AFTER CLOVER.

In some strictures on the remark made by Dr. Voelker, the great agricultural chemist of England, that "the very best manure for wheat is a good crop of clover," Mr. W. R. Carter, in a communication to the *Canada Farmer* says:—

Clover *is* an excellent preparer of the ground for wheat. From remote ages the farmers in the south of England have sown their wheat in the autumn on their clover leys. But it is

only in the *south* of England that wheat succeeds after clover. In the north of England it fails. In Yorkshire, Durham, and all northern counties, the farmer takes oats after clover. Sir James Graham many years ago tried to introduce the south of England plan on his Cumberland estates. He offered great inducements to his tenants. They sowed their winter wheat on their clover leys, and were half ruined by the unfortunate results.

As I have said, under some circumstances wheat after clover fails, and even in the south it i only on the light sandy soils that clover beats farm-yard dung. If that dung were rotten and solid it would beat the clover on the light lands too. To grow wheat at all on those lands it is absolutely necessary to make the land compact. A heavy, bevelled iron wheel follows the plough and compresses the furrow, forming a hard-bottomed drill for the seed. If farm-yard dung, in the condition it is in when generally used by farmers, were ploughed into the light land, the "presser," as it is called, would have little effect, and the crop would be lost. On land of a moderate consistency, good heavy loam, the farm-yard dung would produce a much better crop than clover. And then all good farmers in the south of England top-dress their wheat. Some use guano, some soot—any ammoniacal dressing.

ALSIKE CLOVER.

This new variety of clover is attracting much attention from the West and in Canada, and bids fair to be a valuable addition to our forage plants. We hope it will be tested by some of our enterprising farmers on the soil of New England. We copy the following account of the clover from the *Prairie Farmer*:—

About two miles from St. Charles, is a field of some seven acres of Alsike or Swedish clover, *trifolium hybridum*. This variety of clover was disseminated throughout the West, in a small way by the Patent Office, some years ago; but it is believed that but little or nothing remains of the product of the seeds that were then distributed. The seed with which this field was sowed, was imported by Mr. M. M. Baldridge, last year. His principal design in introducing this new variety of clover, was to furnish a material for bee food, that would be plentiful at a time when other flowers were scarce. He has since become convinced, that the new plant has other claims than that of a producer of honey; that it will furnish abundant forage for cattle as well as food for bees.

This clover, as its name implies, is a hybrid of the ordinary red and white clover; and while it partakes somewhat of the nature of both of these, it has some peculiarities that belong to neither of them. Its roots are fibrous, and of unusual length, which would seem to insure its hardiness and its ability to withstand drought. This abundance of root growth would also show that it will prove a very valuable fertilizer for worn-out fields, and that it will be a desirable crop to precede wheat. The stalks are much smaller than those of red clover, and do not turn dark to the same extent when the plant has matured. The foliage is also much more abundant, and the same is true of the blossoms. The flowers are very beautiful, of larger size than those of the white clover, of pinkish color, and are very fragrant; they also continue longer than those of either variety of the clover that is common with us. In England, they are at pains to have a sufficient amount of fragrant plants in the hay, to impart to it an agreeable scent. A small proportion of this clover grown among Timothy and red top would on this account, we think, be very desirable.

It is said to be more abundant in seeds than either of the other varieties of clover, and, unlike red clover, matures its seeds from the first set of blossoms. When we visited the field it was past the season of full blossoming, but the leaves were still green and the stalks showed no signs of blackening. Only four pounds of seed were sown to the acre, but the stalks were sufficiently thick, and we should judge the yield of hay would be from one and a half to two tons to the acre. This clover has proved to be very valuable for furnishing honey; the bees coming to it in great swarms from St. Charles, throughout the period the clover remained in blossom. Mr. Baldridge has been so well pleased with this new clover, that this year he has sown over fifty acres of it.

Remarks.—We notice in the *Prairie Farmer* that Mr. H. M. Thomas of Brookline County, sent to the office of that paper a stalk of Alsike clover seven feet and one inch high, and says he could send a ton as nice and as large.

Feeding Whey to Milch Cows.—After having had considerable experience in feeding whey to milch cows, Mr. X. A. Willard says in the *Rural New Yorker* that he regards it as very objectionable. In the first place the nutritive value of whey, of which over ninety-three parts in a hundred are water, is less than is generally supposed. It is very liable to make them scour. Like distillers' slops it increases the quantity of milk, but decreases its quality. In hot weather the milk from cows fed with whey soon sours; and sometimes will show a decidedly acid condition as soon as drawn, if tested with litmus paper. Such milk soon becomes perceptibly sour to the taste and passes rapidly into putrefactive fermentation.

EXTRACTS AND REPLIES.

SEEDING LAND IN THE FALL.

I should like to inquire through the FARMER, if it is a good time to seed land to grass in the fall? I have about one acre, part of which is too wet to seed in the spring. Would it be likely to winter-kill to seed it in the fall? Also, what would be the best kind of seed to sow? I have seen a mixture of red-top, timothy and clover recommended for such land, but never have known the red-top sown in this vicinity. Corn large enough to boil!

Cabot, Vt., Sept. 2, 1869. S. B. BLODGETT.

REMARKS.—It is good husbandry to seed land to grass in the latter days of summer, or the early days in autum. It is a little too late now. If the grass does not root and get a fair hold of the soil, it is quite likely to be started out by frost and be winter killed; yet we have known good farmers to sow clover seed just before the ground froze up.

A good plan would be to prepare the land this fall by thorough ploughing, pulverizing and levelling, and sow eight quarts of timothy seed, one bushel of red-top, and six to ten pounds of clover seed, just as early in the spring as the surface can be properly harrowed. If the land is moist and rich, you will probably get a stout crop the first season. Some, however, object to sowing clover seed early in the spring, believing that the frost kills the young plants, and prefer to delay till danger of frost has passed. But by so doing we are liable to injury from droughts, which often succeed our spring rains. We solicit the opinion of farmers as to the best time for sowing clover seed.

MUD-DAUBER WASPS.—*Pelopæus lunatus.*

I send you a specimen of "homes without hands," which is quite unlike anything I have ever before seen. Two of these singular domicils were located on the walls of the house this season, and I supposed them to be the work of mud wasps. One of the nests, however, fell a few days since, and I was surprised to find it colonized by spiders. A worm of a whitish color and not quite an inch in length, was found among the debris, and like the spiders, exhibited but little vitality. Wishing to learn something of the habits of these little insects, I send you the remaining house and its inmates, and perhaps the transportation may be to them as great an event as the recent removal of the Hotel Pelham, in your city, was to the inhabitants thereof. MATTIE.

Marlboro', Mass., Sept., 1869.

REMARKS.—"And now we approach a great mystery," says Dr. Walsh, in an article on wasps, as he commences a description of this species. He had been describing the various Digger Wasps—see *American Entomologist*, Vol. I., page 122—which dig holes in the ground for their nests, and then remarks that some naturalists, not being aware of the habits of the Mud-daubers, have advanced the erroneous opinion that it is only among the bees and true wasps that we find the habit of constructing nests with materials brought from a distance. This the mud-daubers do. Yet notwithstanding this peculiarity he classes them with the digger wasps, as the differences between the daubers and diggers are not regarded as sufficient to justify distinct classification. Instead of excavating the earth for its nest, the mud-dauber gathers the materials for its construction from the neighborhood of wells and other places where water is habitually slopped upon clayey ground, and plasters them on the interior of buildings or other sheltered spots. These nests are composed of one or more layers or tiers of clay tubes arranged side by side and end to end. Here are the houses of the future offspring of the mother wasp, which she is never to behold, but for which she provides with a wonderful instinct. How she proceeds to carry out her purpose is told by Dr. Walsh, who, in describing the general habits of this class of wasps, says:—

Flying forth among the trees and bushes, and eagerly scanning the hidden recesses of the most tangled herbage, the female wasp,—and we are almost ashamed to say that it is only the female that works, the male being an idle gentleman who occupies his time entirely in sipping honey and gallanting the ladies,—soon discovers a specimen of the particular kind or kinds of insect or spider, which it is the habit of the species to which she belongs to select. Seizing it and pricking it with her sting just sufficiently to paralyze it forever, but not so as to deprive it of life, she then flies off with it in triumph to the already constructed nest, and returns for additional specimens, till she has accumulated a sufficient supply of meat to feed one of her own larvæ to maturity. She next deposits a single egg among the still living but paralyzed animals that she has collected, seals up the mouth of her nest or cell, usually with earth or tempered clay or fragments of wood, and is off once more to build and provision new nests and repeat the same process over and over again, until her stock of eggs is exhausted. The larvæ that afterwards hatch out from these eggs are in every case soft, legless, whitish maggots, with a somewhat horny head and a strong pair of jaws, but no other weapons whatever, whether offensive or defensive. Yet, strange to relate, they live at their ease among the prey collected for them by maternal forethought; and this prey is often a lot of bees that, if in full vigor would sting them to death in a moment, or a mass of ravenous spiders that, but for the fatal poison infused into their vitals, would like no better sport than to gobble them up at a single mouthful.

"But," it will be asked, "why this unnecessary cruelty? Why not at once sting the poor bees, or caterpillars, or spiders to death, and put them out of their misery?" The answer is, that the larvæ of these wasps live several weeks before they are full-fed and ready to form their cocoons; that during all this period they require fresh meat; that the time of the year when these operations take place is during the heats of the summer; and that, throughout that season, insects or spiders that were stung to death would putrify and become unfit for food in a single week. There are seldom any mistakes in Nature. The Power that created the wasp knew what kind of food its larva required; and—whether by direct or indirect means it matters not—He has so organized the mother-insect, that she is enabled and impelled to provide for her offspring the right kind of food, in the right quantity, at the right time, and in the right place. With a vast apparatus of steam-boilers and hermetically sealed cans, man has at length succeeded in preserving meat, fresh and untainted, for an indefinite time. With nothing but her good sharp sting and her little bag of pol-

son attached to it, the female wasp, ever since the creation of the world, has been doing the very same thing in its own department of life. Yet, because the animal is comparatively a small one, we overlook and despise the beauty and simplicity of the process by which it works. In reality, however, this process is just as wonderfully ingenious, as if a ship-owner had the power of provisioning his ship with living sheep and living oxen, manipulated in such a manner that they could be packed in the ship's hold like so many hogsheads; that they should require no food or attendance there, and neither kick nor struggle, nor bellow nor bleat, but lie perfectly still; and yet that, whenever wanted for food, they could be hauled up out of the ship's hold and converted at pleasure into good fresh, juicy beef and mutton.

In some cases, a single caterpillar, or spider, forms sufficient food for a single larva; and then the nest is provisioned with only a single individual. In other cases, as with several species of wood wasps, that bore nests for themselves in timber, and provision them with plant-lice; nearly a hundred individuals are stored up for a single larva. The more usual number is from half a dozen to a dozen. In no known case does any digger wasp attempt to rear more than a single larva in a single nest. As already hinted, each species of digger wasp usually selects a particular species, or, at all events a particular group, either of insects, or of spiders, as food for its young; but there are several exceptions to this rule, owing, no doubt, in part, to the occasional inability of the mother insects to procure the appropriate kind of food in sufficient quantities. Some provision their nests with grasshoppers, some with cockroaches, some with snout beetles of various kinds, some with ants, bees, and in Europe even with honey-bees; a few with different kinds of bugs, frog-spittle insects, and plant-lice; a great number of them with various kinds of two-winged flies, and a still greater number, perhaps, with the larvæ of various moths; and, besides all these, many distinct species, belonging to widely distinct genera, prey upon spiders.

WHEAT TURNED TO CHESS.

I notice in your last issue an item from the *Dixie Farmer*, concerning the changing of wheat to chess. We all know how often this theory has been broached and how strongly defended or attacked, and while myself an unbeliever in any such transmutation, I desire to give you an instance reported to me on good authority,—by an eye witness,—and will leave you and your readers to explain the matter if you can.

About two years ago Mr. P. H. Strong, of Pomfret, Vt., sowed a piece of mowing ground, rather moist soil, near his barn, about three-fourths of an acre, with winter wheat, as nice seed as could be obtained, and not a particle of chess to be found in it. The following spring, to all appearance, the wheat was in good condition, seemingly not winter killed in the least. During June, passers-by commented frequently on its flourishing appearance—stout, thrifty, and promising at least thirty bushels to the acre. On heading out, *the whole piece was chess;* hardly a head of wheat in the field! He cut it for fodder. My informant saw the straw in the barn after cutting, and it was as stout as any wheat straw he had ever seen, and apparently identical in appearance.

Now the question arises, Where did the chess come from, or what became of the wheat? And another query: Has any one ever seen chess in spring wheat?

Now, Mr. Editor, will you tell us whether chess is anything more than imperfect wheat? Will chess grow when planted, or is it like the mule, incapable of propagating its kind? I do not wish to start a controversy, but I know there are many farmers who thoroughly believe in the change or degeneration of wheat to what is called chess, and you may convince them possibly of their error.

Thetford, Vt., Sept., 1869. E.

CULTIVATION OF THE CRANBERRY.

It seems singular that this fruit is so little cultivated, when there is nothing that can be made so profitable to those who will engage in it. When you can get from $10 to $25 per barrel for the fruit, what is there that will pay so well about the farm? I see large pieces of land on many farms, now lying worthless to their owners, which would bring them almost fortunes in a few years if they were got into good cranberry meadows.

Mode of cultivation.—The swamp or meadow should be thoroughly drained, the surface soil taken off from six inches to one foot deep, being sure to take all the grass and weed roots out, as the vines will do nothing if they are suffered to grow with them; then sand should be carted on about six inches deep—coarse, yellow sand is the best; when this cannot be obtained gravel will do. The vines should then be set from one to two feet apart, just as you like, in small bunches; the nearer they are set the sooner they will cover the ground. Build a dam so as to flow them in the fall. Keep the water on all winter, and till about the middle of May. They will begin to fruit the second year, and will increase for ten or twelve years, when they should be reset. They frequently produce, in good locations, from four to six bushels per rod. Vines can be obtained in this neighborhood at a reasonable price. Geo. M. Wonson.

East Gloucester, Mass., Sept. 16, 1869.

NATIVE OATS.

Mr. M. C. Peck, of Benson, Vt., has left with us a stool of forty-two stalks from one kernel, which came up in a potato field on the farm of Elliott E. Smith of that town, from seed probably dropped in the manure. He was not able to give the number of grains, as the hens harvested the crop and neglected to keep a record. It shows, however, that under favorable circumstances our ordinary oat is not far behind the crack varieties.

TOP DRESSING.

Last year I had a piece of grass land that for two years had borne but very little, and I concluded to plough it and cultivate it a year or two. Early in the fall I gave it a good coat of manure, intending to plough it under at once; but being delayed a little, I found the grass started finely, and, with the advice of a neighbor who watched it closely, I concluded to leave it and see what would be the result upon the crop. Last spring the grass started and grew finely, and I cut a heavy crop of hay, of the first quality. A strip on one side of the piece was not manured, and the hay was much lighter; but a good second crop of clover has sprung up on it, while on the manured part, scarcely any clover appears. Why is this? The grass on both parts was alike last year. If I can obtain manure, I intend to give it another dressing this year.

GRAPES.

I have a Concord vine that has borne a few grapes several years. I have cut the vines back to two eyes, every fall, until last year, when thinking I could obtain more fruit by leaving more vine, I left them three or four feet long. This year it hangs full of grapes, but the wet and cold weather

has retarded their growth. They are small and later than usual. I fear they will not ripen. We had frost in low places the 7th, 9th, and 31st of last month, and the 1st and 2nd of this, but I think no damage was done. GRANITE.

Bloomfield, C. W., 9th mo., 1869.

BARREN APPLE TREES.

I have an apple tree which blossoms full every year, but never bears any apples. Can you inform me of anything I can do to the tree to make it bear? My land is a light plain land.

North Orange, Vt., 1869. F. G. HOLDEN.

REMARKS.—About two years ago we published a statement by a Wardsboro', Vt., farmer, who accomplished this object by taking a ring of bark 2¼ inches wide from a limb of a barren tree, when it was in blossom. In a communication just received the writer, who styled himself "An apology for a Farmer," says: "That limb retained its vitality through the season, and the apples remained on it until harvest time, when it died. Last year I rung two limbs on the same tree, taking only about ¼ of an inch in width of bark, entirely around the limbs, with the same result as to their fruitfulness. These two limbs bore more apples than all the rest of the tree. During the season the bark formed a connection, and those limbs are thrifty this year. This should be done when the tree is in full blossom. Some recommend splitting the bark of the tree in several places; but so far as I have tried it is not so beneficial as ringing. Pruning apple trees is too much neglected. I pruned a tree last winter which had borne but very few apples for several years, which now has a larger quantity than formerly. Again, the land is not kept rich enough in orchards. It should be kept in as high a state of cultivation as is required for corn or even squashes. The grass, also, should be kept away from the trees, and the ground made light. Many set their trees too close together; forty feet apart is plenty close enough, in my opinion."

A very successful fruit raiser near Boston, in addition to such cultivation of his orchard as enables him to raise squashes between the rows, puts coarse meadow hay around the trees, as a mulch, which remains during the hot, growing season. A load or two of muck might benefit your tree. When the country was new, fruit grew almost spontaneously; now it must be *cultivated*, as other crops are cultivated and tended, especially if the trees are set on "light plain land."

THE CREEPING CLOVER.—*Trifolium Procumbens.*

I send you enclosed some seeds of what seems to be a species of clover. It runs like a vine, has yellow blossoms and a leaf like clover.

You may be familiar with this species, but as it is new to me, I send it for your inspection.

It grows in our factory yard, and I have no doubt the seed must have come in the wool received. THOS. TALBOT.

Lowell, Mass., Aug. 23, 1869.

REMARKS.—This is a beautiful little plant, and besides the botanical name given above, is called *yellow clover*, as it has a yellow blossom; or *Trifoil*, because the leaf branches into three parts, and nearly representing a circle.

We found this clover in the wheat fields, and some other places, in Addison County, Vt., a few weeks ago, where it was looked upon as a new comer. The people had given it the appropriate name of *creeping clover*, on account of its vine-like appearance. We have never seen it until this season, nor had the people there. It is also new to our correspondent. Wood, in his work on Botany, says this plant is indigenous from New Hampshire to Virginia. Where has it been that so many persons have not seen it? What peculiar condition of the soil or atmosphere has made it active now? Who can tell?

CRAB APPLES.

I send you, by express, half a bushel, comprising a few of the varieties of my Crab Apples. The fruit this year is not of usual size. I put in a cluster of the Rose of Stanstead, twenty-two in number, which I hope will arrive in good order, that you may see how beautifully they grow. I have similar clusters of from ten to sixty apples. A few of the thirty varieties that I have are wrapped separately, with name attached. I have other varieties that equal or excel those sent. My rule for preserving this fruit is, one pound of sugar to one pound of apple, boiled until soft.

Derby Centre, Vt., Sept. 29, 1869. B. BRYANT.

REMARKS.—In the WEEKLY FARMER, June 26, and at page 380 of the MONTHLY, an illustrated article on crab apples was published. Mr. Warder, in his American Pomology, says that our native crab,—*Pyrus coronaria*,—though showing some slight tendency to variation, has never departed from the strongly marked normal type. These specimens we suppose are of the Siberian crab,—*Pyrus baccata*,—which Mr. Warder says has wonderfully improved under culture, and has produced some quite distinct varieties. The Siberian is adapted to a northern latitude, and we had no idea of the size and variety of this fruit until we saw it exhibited at the Fair at Burlington of the Vermont State Agricultural Society. Here were over one hundred varieties from the grounds of a single exhibitor.

Among the varieties marked by Mr. Bryant were "Blushing Maid," weighing three ounces, "Montreal Beauty," "Ladies' Favorite," "Rose of Stanstead," &c., all of fair apple size. Most of the fruit is nicely colored, and presents a fine appearance.

GARGET.

We have a cow bought in April, said to have calved in January. After we had kept her a short time, she began to give clotted milk, for about two milkings at a time, once in two or three weeks. On the evening of July 6, I found the right hind quarter of her bag badly caked, milk dirty and clotted, and three quarts less than usual at night. Milk continued poor for four days. The milk in the other three quarters appeared as good as usual. After this her milk was good for two months. September 10, I drew one-half a teacupful of clotted milk from the same hind quarter. The

history of the cow previous to April is unknown to me. She is a good milker, about eight years old.

Melrose, Mass., Sept. 20, 1869. S.

REMARKS.—You have given a correct description of a disease too well known among dairymen as the garget. In our younger days poke or garget root was the common remedy. A bit of the root, the length of one's finger and half its thickness, was put into a potato and given every other morning. A farmer in Roxbury, Mass., told us last year that he finds a few messes of beans, half a pint at a time, once or twice a day, a sure cure. Tomatoes have also proved beneficial. Others treat a gargety cow much as they do themselves for a cold—keeping her in a stable with a warm dry bed, with a nourishing but light diet. The doctors recommend doses of twenty grains of Iodide of Potash, given three times a day in her drink. One ounce makes twenty-four doses of this size.

SOURING OF PORK BRINE.

Will the Editor, or some of the readers of the FARMER, tell me the cause of pork brine souring, and what will prevent it? I salted one-half of a pig last fall, using Liverpool salt, and about four weeks ago the brine began to sour. There is nearly a peck of salt in the bot om of the barrel. The barrel had been used before, but appeared to be sweet. Some say it will sour in a brown ash barrel? Is that the cause? J. L. M.

Jay, Me., Sept. 10, 1869.

REMARKS.—It is the first instance of souring of brine that we have heard. Only one reason occurs to us that should cause it, and that is the use of *Liverpool salt.* Packers in this region never use that salt for pork. Some years ago the United States Government instituted experiments in the use of salt for packing meats, and the report was that Liverpool salt is unfit for preserving pork. It will answer for beef, we think it stated, but not for pork, as it is said to contain too much of the sulphate of lime. Use good rock salt, such as is called "coarse fine," and the brown ash barrel will be harmless, probably.

SWAMP MUCK AND STABLE MANURE.

Will you inform me through the columns of the FARMER whether it will pay to draw swamp muck a distance of three miles, at a cost of ten cents per load? Can draw fifty bushels per load.

Which would be the most profitable, the muck drawn that distance, or stable manure a distance of six miles, at a cost of one dollar per load?

Williston, Vt., Sept. 5, 1869. ONYX.

REMARKS.—If your statement is understood correctly, it is that the first cost of the muck is ten cents, to which is to be added the cost of hauling; and the first cost of the stable manure, one dollar, beside expense of transportation. By way of reply, let us ask you a question. If you have experience in the use and results of good muck, do you think that good stable manure is worth *ten times* as much per cord, or load, as good muck, with the cost of three additional miles to be added? With a great deal of experience in the use of muck on various soils, we do not hesitate to say that we should decidedly select the muck if it is of good quality. Still as we should favor a mixture of the muck and the manure, why not try some of both together, say one cord of manure to two or three of muck, well mixed; and with each separately, and benefit the readers of the FARMER by reporting the result of your experiments.

FORETELLING THE CHARACTER OF THE SUGAR SEASON.

For many years I have been trying to find out some way or rule by which I could tell, in advance, the probable yield of maple sap,—whether large or small. With all farmers who have large sugar orchards this would be an important item, could a rule be found to this end; for fixtures and help would be secured accordingly.

Some winters when we have had but little snow, and the ground has been frozen to a great depth, I have noticed that in the spring following, we had a heavy flow of sap, and a large quantity of sugar was made; again, I have noticed that when we have had a large quantity of snow, and the ground but little frozen, the spring following would be an excellent sugar season.

Up to the present, I have not been able to determine, in *advance*, the yield. Presuming that other sugar-makers are as ignorant upon this point as myself, I wish to call the attention of all interested in this matter to an *Indian* rule on this point, which I learned a few years since, and have since carefully noticed, and thus far without a failure, in my locality. The statement of the rule or law, is this: If the maple leaves ripen and turn yellow, and the buds perfect themselves so that the leaves fall off naturally, without frost, then there will be a good flow of sap the following spring; but if there is a hard frost that kills the leaves, and they fall off prematurely, before the bud is perfected, then we may look for a poor yield of sap. In other words, the flow of sap will be more or less abundant in proportion to the ripeness of the tree before frosts the previous autumn. I invite the observation of sugar makers as to the correctness of this rule in their localities.

TIMOTHY WHEELER

Waterbury Centre, Vt., Sept. 25, 1869.

KEROSENE FOR LICE ON CATTLE.

The use of kerosene oil for the destruction of lice on cattle has been condemned by some of the writers for the FARMER. Used as has been stated, it may justly be condemned, and every body cautioned against it. But I have used it with perfect safety and with entire success. To one pint of lard oil add a single table spoonful of kerosene, and after mixing them well together apply one-half of it to a common sized animal with a sponge or rag, rubbing it in well from head to tail, and in three or four days use the other half in the same way. In these proportions I will warrant the ointment safe and sure. F. G. HOLDEN.

North Orange, Vt., 1869.

FOOT-ROT (?) IN PIGS.

Last spring a farmer in this vicinity had a litter of seven or eight pigs. When a week or two old they showed signs of disease in their feet and legs, which seemed like the foot rot in sheep. He did nothing for them, and they began to die off. After losing three or four, his wife began doctoring them, using various kinds of herbs, without success, till there were but two left. Then she thought of tar, and spreading tar on pieces of cloth she wrapped them on the pig's feet, and in a few days they be-

gan to heal. But the disease, whatever it was, seemed to settle on the lungs, and their breathing could be heard in the house. Then she tried other remedies, among which was "Mother Bailey's Soothing Syrup;" but one pig persisted in dying in spite of Mother B. The other was taken up for dead, but finding life was not extinct, the farmer's wife gave it a dose of "Condition Powers," and perhaps a second dose, and the powders cured the pig, and to-day it is worth twelve or fifteen dollars. Can any of the readers of the FARMER tell us what ailed the pigs, or what would have cured them? F. D.

Berlin, Vt., Sept. 22, 1869.

SUDDEN FAILURE OF MILK.

Allow me to give my experience in a case similar to that mentioned by "E. W. R.," in FARMER of Sept 25. One night, eight or ten years ago, in June or July, when cows were giving a pailful at a milking, one of my cows gave only about one-half the usual quantity, and the next morning not more than two or three quarts, and by the second morning less than a pint. The cow eat as well as ever, and all that I could discover unnatural was a slight discharge of thick matter from the eye, which formed in scales at the corner, and the horns were as cold where they joined the head as at the tip.

A neighbor told me to put spirits turpentine in the hollow on the top of the neck, back of the head. After four applications, night and morning, the horns were as warm as natural, and the cow gave nearly her usual quantity of milk. Since then I have tried the remedy, always on the first appearance of the disease, several times, and have found one or two applications sufficient. Think I have seen it tried at least a dozen times, and never knew a failure; still I do not know the cause or nature of the disease, or the reason why the turpentine produces the desired effect. STAR.

Chippenhook Springs, Vt., Sept. 27, 1869.

MODE OF TYING UP CATTLE.

I beg through the FARMER to reply to the inquiries of Mr. Jason E. Hart, New Haven, Vt., about tying up cattle, though I feel somewhat diffident, for two reasons. First, I have so frequently answered questions in the FARMER, that I fear lest I should be considered a "bore." Second, that advice from an Englishman may be regarded by some Americans as old fogyism and of questionable utility in this land of "progress." But supposing Mr. H. to be a plain sort of man, like myself, and that he cares little whether the best plan comes from English or Yankee practice, I will as clearly and as briefly as I can give him an idea of the construction of cattle stalls, ways and modes of feeding, watering, tying up, &c., in use by the great ox feeders of England.

The cattle stalls or sheds have floors of brick, stone or boards, laid inclining a little to the cattle's heels, so that all wet runs off into a gutter a few inches *below* the stalls, and is conveyed into a tank below the fold or stable, which receives all the soakings from the fold. This liquid is pumped up into a large iron box, half round, without any top, and which swings on pulleys, so that up hill or down it always hangs even. Thus the liquid manure is conveyed to the grass land and scattered over it much as water is from a street watering machine.

By the side of each ox is a straight, smooth post, firmly fixed, on which is a large iron ring and a chain, similar to a waggon lock chain, which is fixed round the neck of the ox; so that the ox can at pleasure raise his head as high as he likes, and when he lies down or rises, the ring slips up or down the post easily, and is no detriment to the ox in lying down or getting up. The cattle are tied up to face each other, with a road or passage between them, with an outlet at each end, and sufficiently wide for a man to take in as much hay as he can carry on a fork, or a pair of large water buckets with yoke. Between each two head is a half round cratch or crib, for hay, and three troughs. One each for cut turnips, bran-meal and brewers' grains, and the third for water, being lined with lead, so that two animals can drink out of the same trough. A shed of the dimensions you speak of would have several doors behind the cattle to clean out at. The troughs are fixed quite four feet from the ground, the space under them being open.

Stall-fed cattle when put up to feed are not loosed again till taken to the market. All the best meat is stall-fed in England. Thousands of acres of mangolds, Swedes and white stone turnips are grown there and are cut by a machine into slices about 1½ inch wide for cattle and sheep. Some farmers boil their turnips, scald the meal and bran, and mash up together. Before cattle are tied up, they are turned into a field of mangolds or turnips, hurdled off. When the enclosed lot is eaten pretty close, the cattle are moved farther into the field, and a leaner lot takes their place. This process goes on till ready to tie up. I hope my reply will meet your pleasure.

JOHN WHATMORE.

Bridgenorth Farm, Dunleith, Ill., Sept. 24, 1869.

CONCRETE DOOR-STEPS.

Three years ago I wanted some door-stones. I had some cement left after making a cistern. I made square boxes, at the door where I wanted the steps or door-stones, just in the shape I desired the door-steps. I then mixed up coarse gravel and cement and made a mortar or concrete, mixing in cobble stones, and filled these boxes or moulds. In a short time I removed these moulds and placed boards over the steps for people to walk over till the concrete was hardened. These cement steps remain perfect, neither the frost nor weather having injured them, and they are now so hard that they wear as little by walking over them, as would a common stone.

I think this the cheapest way to get up a set of door-stones. They should be made in the spring of the year, so that they can have the summer and fall to harden in. N. F. ENGLISH.

Hartland, Vt., Sept. 6, 1869.

SICK HOGS WITH PURPLE SPOTS.

Last year my hog was taken sick in hot weather and purple spots appeared on it that were hard like bone. One of my neighbors informed me that some years previous he had a similar case. He showered it with cold water and it got well. I did the same with mine two or three times a day and it recovered. I thought the disease was caused by the hot weather. I had not thrown any water on to it, nor wet its nest as others did.

FARMER STUDENT.

Wardsboro', Vt., Sept. 15, 1869.

PRESERVING EGGS.—A Parisian paper recommends the following method for preservation of eggs:—Dissolve four ounces of beeswax in eight ounces of warm olive oil; in this put the tip of the finger and annoint the egg all around. The oil will immediately be absorbed by the shell and the pores filled up by the wax. If kept in a cool place, the eggs, after two years, will be as good as if fresh laid.

AGRICULTURAL ITEMS.

—The *Maine Farmer* asks, "Is there any consistency in paying a premium of five hundred dollars for the fastest trotting horse and only ten dollars for the best wheat field in the county? There may be, but we cannot see it."

—A correspondent of the *Dixie Farmer* gives a report of the sex of the calves raised on his dairy farm this year. The bull used was a two-years old Alderney. The cows were of different grades. Twenty-eight cows produced fifteen males and thirteen female calves; twelve heifers brought nine male and three female calves.

—Mrs. John S. Jones, of Strafford, N. H., brought fire from Durham sixty-three years ago, and for over sixty-one years that fire was not permitted to go out. Unfortunately about two years ago, this sacred fire, as it may well be called, went out and had to be kindled from fire borrowed at a neighbors.

—Hon. T. S. Humrickhouse, of Coshocton, says in the *Ohio Farmer* that the old and new clips of wool in that section have been all sold, and that, in consequence of the failure to breed them for the last three years, there are but few ewes under four years old. If this thing is continued much longer —God forbid that it should be—our fine wooled flocks will soon have ceased to exist.

—The Bellows Falls, Vt., *Times* says that a few mornings since Dr. O. F. Woods led his horse out to eat in the front-yard, when the discovery was soon made that the horse could not eat. An examination showed a shingle nail standing upright inside the lower jaw. It was soon removed and the horse commenced eating all right. The nail must have got in by eating oats or hay, and entered the jaw in this singular manner.

—For worms in calves' windpipes, a disease most prevalent in dry summers, and often occasioning great mortality, our correspondent, V. M. Hubbard, Rochester, Vt., communicates to the Woodstock *Standard*, the following remedy:—Asafœtida, 3 ounces; aloes, 3 ounces; vinegar 1 quart. Boil together till dissolved. Give each calf a tablespoonful in each nostril every third morning, taking care to hold the head well up to prevent waste.

—Mr. I. Sanborn writes to the *Country Gentleman* that the durability of shingles will be much increased by dipping them into gas tar and rosin boiled into a pitch, while boiling hot; they need not be dipped within six inches of the top. A lively hand will do 2000 per day, and boil the pitch. It expels all dampness and fills up all cracks and worm holes, and makes them next to slate. They have been on his house since 1856, lie very close, are sound, and to all appearance will last thirty years to come.

—The Lewiston, Me., *Journal* says that E. L. Sturtevant, a graduate of Bowdoin, class of '63, and a native of Winthrop, is now devoting himself to scientific farming in South Framingham, Mass. Mr. Sturtevant has been to Europe this season and imported choice Ayrshire stock, sheep from Scotland, &c. He has on his farm six milch cows and sends milk to the Boston market. He is experimenting on the ratio of food to milk, relative value of food, &c. He has a farm of about two hundred acres, and raises fruit, hay, grain, &c., in abundance.

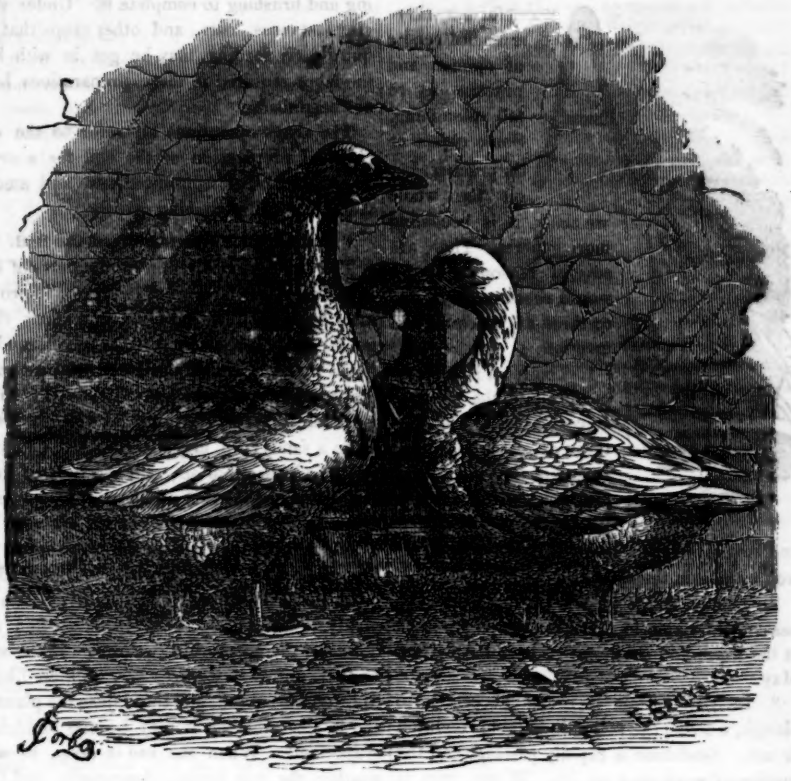
HORSEMEN ON THEIR DIGNITY.

At the Fair of the New England Agricultural Society, last year, there was so much money paid out for "premiums" on fast horses, which were claimed as soon as declared, that the managers were under the disagreeable necessity of informing the exhibitors of stock, implements, &c., that only a portion of the premiums awarded to them could be paid, for want of funds. That this should not occur again, due notice was given this year that in case sufficient money was not received to pay all the premiums, those awarded to the exhibitors of trotting horses, as well as of cattle, sheep, &c., would be paid *pro rata* on the receipts. But this frank and honorable condition was not satisfactory to the horsemen. The Boston "Turf" correspondent of the New Hampshire *Mirror and Farmer* rebukes the managers in the following dignified manner, in a letter in relation to the Portland Fair:—

The Races.—The managers of the Fair did a very foolish thing when they advertised that trotting premiums would be paid *pro rata* upon the receipts, *for turf men object to trotting their horses for the benefit of the exhibitors of sheep and swine*, and consequently several first-class horses who were booked for Portland remained in their stables. Several of the races were quite exciting, however, and the crowds in attendance were well satisfied with the sport.

Fruit Growing in Missouri.—We have received a catalogue of the Bushberg Vineyard, Jefferson Co., Mo., I. Bush & Son, proprietors. Some thirty-eight of the sixty pages are devoted to descriptions and illustrations of grapes, with remarks on their cultivation, wine-making, &c. But with all their advantages of climate and soil, horticulturists have their troubles there as we have here. Dr. Hull of that county recently remarked, people have gone into the business freely, not knowing the discouragements they would meet with. They have found so many insect enemies to contend with, that many have become discouraged. But still this catalogue is a pleasing evidence of the rapid improvement of this comparatively new portion of our country.

Domesticating Minks.—There is an establishment at Cambridge, N. Y., for breeding minks for their fur. It is said that the cost is very slight, and that the income from one mink and her increase will exceed that from a good cow.



EMBDEN OR BREMEN GEESE.

This variety was introduced into this country from Holland, by the late Col. Samuel Jaques, in October, 1821. Mr. Hewitt, an English writer, who favors this variety, says: "The Embden goose has prominent blue eyes, is remarkably strong in the neck, and the feathers, from near the shoulder to the head, are far more curled than is seen in other birds. The plumage is pure white throughout; bill flesh color, and legs orange. One of their great advantages is this,—that all the feathers being perfectly white, their value, where many are kept, is far greater in the market than is ever the case with colored or mixed feathers."—"The quality of the flesh is about equal with the Toulouse; but the Embden is the earliest layer, and frequently rears two broods in one season, the young ones proving as hardy as any with which I am acquainted."

Mr. Bement says, the quiet domestic character of the Bremen geese causes them to lay on flesh rapidly; they never stray from their home, the nearest pond and field satisfying their wants, and much of their time is spent in great repose.

Our cut, which we copy from the *Rural New Yorker*, is from a photograph of a pair exhibited at Birmingham, England, whose weight was fifty-four pounds.

REMEDY FOR BLACK KNOT.—After carefully paring off the excrescence thoroughly, saturate it with spirits of turpentine, with a paint brush, being careful not to touch the tree except in the diseased part.

FALL PLOUGHING.

AMONG farmers there is much diversity of opinion and practice as to fall ploughing. Some object to the practice, but on the whole we think it is becoming more general. There are several reasons why we would recommend it, two or three of which we will mention.

1. The team is in better condition in the autumn. It comes from the pastures or stalls fresh and strong in the clear, cool and invigorating weather, instead of the weakness and lassitude which seems to affect animals as well as men in the spring.

2. The weather is cooler, and both man and beast will be able to perform more labor than in the warm and showery weather of April and May.

3. In the spring it seems necessary to plough, whether the soil is in suitable condition or not. Seed time is rapidly passing, and the routine of work must go on. If one crop is delayed, it is likely to delay another, and confusion and loss is the result. In the autumn no such circumstances exist. It is optional with the farmer when and where to plough, and he can perform the labor leisurely and do it well, and not feel anxious about it. If other work is suggested, the plowing may be left without detriment for a day or two, and the other work performed, and all things go on smoothly and well. All this is the reverse of our circumstances in the spring.

4. Where it is intended to lay land to grass in the spring, the work may be greatly facilitated in the fall by removing the stones, if any are upon it, ploughing, harrowing, and leveling; by filling the dead furrows, mending places that were missed in ploughing, and getting the whole field into a condition fit to receive the best mowing machine among us, when a grass crop is produced. If not washed by rains, the land will be ready for the seed in the spring, and only require a single harrowing and brushing to complete it. Under such circumstances, oats, and other crops that require early seeding, may be got in with half the labor required if these preparations have not been made.

The above operations all refer to the *mechanical* preparation of the soil for a crop. There are other considerations, and among them, that fall ploughing greatly

Assists the Pulverization of the Soil.

The mechanical division of the parts of soil is known by all farmers to be a great improvement to it, but few, however, who admit this, go far enough in this particular. No one believes that a heavy clay soil will produce good crops unless it is thoroughly divided by some mechanical means, though it be well manured. Even a sandy soil may become too compact for the admission of air, rain and heat, if long left untouched, so that there will be no free growth of roots which are started in them.

The first object, then, in the preparation of the soil,—after drainage, where it is needed—is to get a *deep* one. The roots of many plants go deeply into the earth, and often require all the moisture it contains. If the soil be thin, water, in wet weather, will be likely to lie on the subsoil, and thus injure the plants; and in dry weather it may be too suddenly evaporated. When the soil is deep, in wet weather the rain escapes downwards, and the plants sustain no injury; and in dry weather, if the moisture is exhausted at the top, new moisture arises from the bottom and makes up for the deficiency.

The next important point is to make this deep soil a *fine* one; that is, its particles so separated or comminuted that rain water will not flow through it as it would through a collection of pebbles or coarse sand, but be arrested by it at once, and retained there for action on the minerals and other sources of nutrition which are in the earth. In this deep and fine soil another point is gained of the utmost consequence to the prosperity of the plant,—the roots can have a wide and unobstructed range in search of the food which they need.

The *food* of the plants—that is, what they receive from the soil,—is taken up by the fibres of the roots, and the quantity taken up does not depend alone upon the quantity in the

soil, but upon the number of fibres present to absorb it. There may be an abundance of plant food in the soil untouched, for the want of fibres to feed upon it. The more the soil is *pulverized*, the more these fibres are increased, the more food is absorbed, and the more vigorous does the plant become. Pulverization, therefore, is not only advantageous previously to planting or sowing, but also during the progress of growth, when cultivation by hoeing is applied in the spaces between the plants.

Pulverization also increases the sponge-like property of soils, so that it takes up whatever moisture comes to it, and holds it, thus rendering their humidity more uniform; and this will be the greatest where the particles of the earth are finely divided,—for gravels and sands hardly retain water at all,—while clays, not opened by pulverization, either do not absorb water, or when, by long action, it is absorbed, they retain too much.

"Water," Loudon says, "is not only necessary as such to the growth of plants, but it is essential to the production of vegetable matters which they contain; and unless the soil, by *pulverization*, is so constituted as to retain the quantity of water requisite to produce these extracts, the addition of manure will be in vain. Manure is useless to vegetation till it becomes soluble in water, and it would remain useless in a state of solution, if the solution so abounded as wholly to exclude air, for the fibres, or mouths, unable to perform their functions, would soon decay and rot off."

Pulverization, in a warm season, is of great advantage in admitting the nightly dews to the roots of plants. The soil, being fine, takes up the moisture as fast as it is deposited upon the surface, and passes it along, from particle to particle, just as a sponge does, down to the hungry fibres that are on the roots. The operation is the same when a rain falls upon the surface. It is in this way that crops in fields which are in a fine condition are watered and sustained, while those where the soil is left in a compact form, perish through lack of moisture.

In Bengal, it is said that the farmers contrive an implement something like our *ladder*, or two or three ladders, side by side. It is hauled over the ploughed surface to level and pulverize it, and this they call *confining the moisture!*

A careful ploughing of lands in the fall, will greatly relieve the spring work, and sensibly increase future corps.

Ladies' Department.

From All the Year Round.

TO A LITTLE HUSWIFE.

O little Huswife clean and spruce,
Thy use one heart divines;
A rosy apple, full of juice,
And polish'd—till it shines!
A tidy, tripping, tender thing,
A foe to lazy litters,
A household angel, tidying
Till all around thee glitters!

To see thee in thy loveliness,
So prudish and so chaste;
No speck upon the cotton dress
Girdled around thy waist;
The ancle peeping white as snow
Thy tuck'd-up kirtle under;
While shining dishes, row on row,
Behind thee, stare and wonder!

While round thy door the millions call,
While the great markets fill,
Though public sorrow strike us all,
Singing, thou workest still;
Yea, all thy care and all thy lot
Is ever, sweet and willing,
To keep one little household spot
As clean as a new shilling!

The crimson kitchen firelight dips
Thy cheeks until they glow;
The white flour makes thy finger tips
Like rosebuds dropt in snow,
When all thy little heart
Flutters in exultation
To compass, in an apple tart,
Thy noblest aspiration!

O Huswife, may thy modest worth
Keep ever free from wrong;
Blest be the house and bright the hearth
Thou blessest all day long!
And nightly, may thy sleep be sound,
While o'er thee, softly, stilly,
The curtains close, likes leaves around
The hushed heart of the lily!

DOMESTIC ECONOMY;

OR,

HOW TO MAKE HOME PLEASANT.

BY ANNE G. HALE.

[Entered according to Act of Congress, in the year 1856, by R. P. Eaton & Co., in the Clerk's Office of the District Court for the District of Massachusetts.]

FRUITS AND VEGETABLES—CARE AND COOKING.

CHAPTER XVIII.

Ripe fruit and the esculent roots and seeds, when fully matured, undoubtedly furnish the best sustenance for the human frame. During the summer and autumn the generous earth lays an abundance of these rich gifts at our feet, and while enjoying them then, we are desirous to ex-

tend their advantages through the barren winter and spring. But the great law of change, which is written all over the material world, governs strictly "the green things growing." Year after year, "first the blade, then the ear, after that the full corn in the ear," rounds the whole circle of vegetable life, and when the plant has perfected its seed, or attained the fulness of its strength and beauty, decay sets its seal upon it, and it is soon dust and ashes.

Various methods have been devised, and have proved more or less successful, for arresting the processes of Nature; thus prolonging this time of perfection, and retarding decay or preventing it entirely. Hence the preparation and arrangement of vegetable food for consumption during the cold weather is one of the most important of housekeeping duties, and keeps the house-wife busy through much of the autumn. Baking, drying, canning, stewing, salting, pickling, preserving, all have this end in view;—not always, it must be confessed, with proper deference to the laws of health or to the digestive powers.

Good ripe fruit in its raw, or natural, state is not only more agreeable to the palate, but decidedly more beneficial as food, than when through subjection to heat—the prevailing power in cookery—and the admixture of flavors alien to its nature, it has lost its specific qualities.

Fruit should not be gathered when moist with rain or dew, especially if it is to be immediately packed, or to be kept away from the free air; for the dampness thus retained generates heat, and fermentation then rapidly ensues. Neither should it be plucked when hot with the mid-day sunbeams, unless it is to be consumed very soon; for in that condition its pulp is all ready for decomposition. Care should be taken that the cuticle is not torn nor the pulp bruised. It must be kept in a cool, dry atmosphere—as cool as it can be without danger of freezing. Darkness, also, is requisite for berries and the more delicate varieties of pears and peaches. If closely sealed in air-tight jars while it is sound, and then placed away from heat, light, and moisture, it may be kept unchanged many months—till another year's crop is ready for use. But whenever unsealed it must be immediately eaten, or cooked, as confinement renders it more susceptible than ever to the influences of the air and light. Broad-mouthed bottles answer very well for canning fruit. Tin cans can be used for anything uncooked that has a firm skin, but they impart a metallic taste to all juices;—stone or glass jars are much to be preferred for fruit; and, indeed, for vegetables, as they can be so much more easily sealed by a woman.

Select sound ripe fruit—not mellow—which is a sign of over-ripeness. Pour boiling water over tomatoes and peaches in a dish. Let them stand till their skin can be wiped off from the pulp with a cloth. Pare and quarter pears and quinces and remove their core. Very solid peaches need paring instead of scalding to remove the skin. Berries, cherries, and plums take in their natural condition. Wipe the stems of pie plant and cut them into inch pieces.

All fruit that is pared with iron or steel instruments as fast as it is done should be dropped into cold water and kept there till it is canned, or cooked, or prepared for drying, as the union of its acids with the metal is apt to discolor it, and exposure of the pulp to the air turns it dark. Fill jars or bottles with this fruit, each kind by itself,—mixed fruit never keeps well. Pour in cold water till it is covered. Have good whole corks that will fit the necks of the vessels very tightly. Let the corks lie in hot water a little while before using; this will make them elastic and less liable to break. Drive them in carefully with a hammer or mallet. Cut them off even with the neck of the jar with a sharp knife, and, if you please, tie over each cork a piece of bladder skin, (wet it to make it pliable.) But there is no need of this if the sealing is good.

Set a number of these jars or bottles in a wash boiler or a large deep pan over a moderate fire, placing under and around them hay, straw, or something of the sort, to keep them from breaking. Fill in cold water to half the height of the jars. Let them heat slowly. Meantime melt together equal quantities of beeswax and rosin, in a small vessel,—three ounces of each is sufficient for a dozen jars. When the water begins to boil take the jars from the boiler; but before you do this be sure that all the doors and windows of the room are shut, and keep them so till the jars or bottles are sealed and cooled, because a draught of cold air will break them. Cover them with a cloth till they are cool enough to handle. Then with a brush or a small swab, besmear the end of the cork, or dip the neck of the bottle or jar directly into the melted mixture. Make this seal smooth, and be sure that there is no crack in it or around it, (by which air would enter); if you have any doubt about it dip again. When the jars are cold pack them in boxes with sawdust or dry sand (dried by heating in the stove oven) and keep them in a dark, cold, dry cellar or closet. A coating of mould frequently forms in the top of the jar, but it does no injury if care is taken that it is not torn when the cork is removed and so mixed with the contents of the jar. There are many patent fruit preserving jars for sale at the stores, but this simple way with common jars and bottles is always satisfactory, where several of those have failed.

Fruit put up in this way retains its freshness of flavor and its firmness of pulp; is very nice to be eaten at table with bread and butter or plain puddings—adding sugar or not, according to taste; may be used in paste or batter puddings, or for pies or sauce, just like freshly gathered fruit.

Some persons arrange the fruit with alternate layers of pulverized white sugar instead of filling the jar with cold water, but it is more liable to ferment.

Grapes packed in boxes, a layer of cotton batting at the bottom and then alternate layers of grapes and batting till the box is full,—batting at the top,—tightly covered, and then placed where they can be dry and cool all winter, will be found nice in the spring.

Delicate fall apples and pears that are to be used during the winter should be carefully wiped, wrapped in soft paper separately, and then laid in covered boxes away from the light. They should be examined occasionally and if any begin to mellow used immediately. The more hardy kinds of pears and apples, as soon as possible after gathering, should be spread on tables and on the floor of airy rooms till they are free from dampness, and then laid (after all bruised and defective ones have been removed) into clean dry barrels and boxes. When there is no convenience for spreading them they may be picked directly from the tree to the barrel, and this be allowed to remain open in the sunshine several days. Then these, as well as those that have been spread to dry, should be closely covered with a tightly fitting head or cover and set in a cool, dry place. Once a month they should be looked over, all that show signs of decay removed; the others wiped with a dry cloth and then closed again from light and dampness.

For the sake of variety, or as convenience, if fruit is decaying rapidly it is well to dry it. Spread berries, cherries, and plums, on earthen dishes or cloths, thinly, in the sunshine, where there is free passage of air. Stir them and turn them over every day. Guard them from moisture, and when they are shrivelled (this will be in three or four days) fill them into paper bags, and paste the seams of these bags so tightly that no insects can enter. Apples and peaches should be pared and quartered—the apples cored, the peach stones cut out,—they will dry more nicely and quickly if sliced. String them on a slender twine or a stout thread by means of a needle, and then hang them in a current of air; or spread in a similar manner to berries. [The writer has lately seen in one of our public prints an account of drying fruit and vegetables very quickly and nicely by placing them beneath the glass of a hot-bed,—the sash being raised above the frame on which the fruit is spread, two inches at each end, for the admission of air. The method is worthy of trial.]

None but sound fruit, firm in flesh, and of a bright flavor, is fit to be dried. After drying, keep it from dampness and heat till needed for cooking. Very nice drinks for the sick may be made from dried fruit. It should be washed, and then boiling water be poured upon it, which when cool may be sweetened with a little nice sugar. Dried fruit requires washing, soaking in lukewarm water—a little more than will cover them—for a few hours, and then stewing, before it is swollen and tender enough to eat. If it is very sour use clear water for stewing it; if not, part of that in which it was soaked. When it is nearly tender enough add what sweetening it requires—sugar is best. Do not stir it much, keep the fruit as whole as possible. Use it as a sauce or for making pies. If for puddings it needs only soaking.

Dried apples and peaches make the best jelly. For this soak them, allowing two quarts of lukewarm water to one of fruit. Then boil the fruit in this water—placing with it a small bag of ground ginger or cinnamon for flavoring—till it is very soft. Have ready a flannel bag. Put the fruit into this bag and hang it up to drain. When it has drained nearly dry squeeze the bag gently, in order to get all the liquor, and mix with a pint of this a pound (three cupfuls) of sugar. Pour this into the stew-pan (nothing but porcelain-lined ware should be used for fruit) and let it boil slowly ten minutes, then turn it into jars or jelly glasses and set them aside to cool. When cold cover with thick white paper pasted securely over the edges of the jars and glasses, and keep them where they will not mould. Fruit may be nicely dried in a cool oven, but it will have a different flavor from that exposed to the sun and air, and will not keep a great while.

Pears, peaches, and apples are very nice baked in a hot oven three or four hours. Pare and core them; then place them in a deep earthen pan with half their weight in sugar dissolved in water—one cup to a quart of fruit,—or with the same quantity of molasses, and cover the pan with a thick crust of brown bread dough—which may afterward be used for making coffee. Apples and pears are, however, very desirable as dessert baked in their skins in flat pans with water enough to prevent them from adhering. And both pears and sweet apples are a great addition to the corned beef dinner;—boil them with the vegetables that accompany it. They are also quite appetizing boiled in fresh water and served plainly with roast fowls or pork; or, cut in thin slices and fried with the least particle of fresh lard to accompany veal or mutton chops.

Everybody knows that a baked spare-rib, or roast goose or turkey is not complete without sour apple or cranberry sauce; but they are much more desirable with a boiled leg of lamb. Stew the fruit in one-quarter its measure of water. When nearly done stir in just sugar enough to relieve its keenest acidity. Let it boil a moment longer and then rub it through a hair sieve. Serve it cold. A good substitute for this is the "country" apple sauce, made in large quantities by the Shakers, who supply the grocers; but it is a good plan when apples are plenty to make your winter's stock yourself. It is very convenient for filling to either baked or fried pies, or to eat with bread and butter, as well as with meats. To make it,

use both sweet and sour apples. Boil first one gallon of new cider till only one quart remains. Set a large kettle (in which a dish or plate is laid, to prevent the sauce from burning at the bottom) over a slow fire. Pare, quarter, and core your apples;—you will need two gallons of cut apple for a quart of boiled cider. Put these with the cider into the kettle and let it boil two hours; then pour in a quart of molasses, stir the sauce thoroughly, and boil it steadily six hours more. A coal fire covered with ashes will cook this well. If the fire will keep all night let the kettle remain, stewing moderately, till morning; it will then be of a bright red color. Take it into stone or glass jars, or an oaken firkin. Never put it into glazed earthen ware;—there is arsenic in the glazing, which the acid sets free. The apple is such a healthful fruit it ought to be on our tables in some form at every meal.

Next to this comes the tomato. The skin of this should always be removed by scalding and rubbing or peeling; then with salt alone, or salt, pepper and vinegar it is very relishing to the homeliest fare. Sliced, with sugar, it is delicious; and with good milk or cream added elegant enough to set before a king. Skinned, flavored with a trifle of salt and pepper, and the least dole of butter, and boiled half an hour, it is the very best sauce for any meat dinner, and just the thing to be placed piping hot on a hungry man's supper table.

All these methods for keeping and preparing fruit for food can be recommended, they are all economical and healthful. But many persons are not satisfied with them. Pickles and preserves, they crave, and will have, in spite of disordered stomachs, diseased livers, and cadaverous faces. So a few general directions are here given for these.

Pickles—the very name is an abomination—to be considered nice must be made, and kept, hard and crisp. Also, they must be of good color—green being the favorite hue; and to obtain this they must be made in a brass kettle, though a porcelain-lined iron one is better in every respect, except for imparting a green color. Alum must be dissolved in the vinegar to harden them, and the hottest of spices, in plenty, to flavor them. And, furthermore, everything to be pickled must be unripe,—as crude as possible; and the whole vegetable kingdon seems to have been ransacked to get substances of the most indigestible nature as materials for pickles. When some individuals will consume a barrel of these in a year, is it strange that we have so many "sour old maids" in Yankeedom?

The cold, watery cucumber has always been a favorite among pickles. Get those of the size of your forefinger, directly from the vines if possible. Take a hundred of them, wipe them clean and pack them in coarse Liverpool or rock salt, in an oaken tub or firkin, and spread a cabbage leaf (green, of course,) over the top. At the end of one week take them from the salt and put them in a stone jar or broad-mouthed bottle, together with whole cloves, peppercorns, and allspice—an ounce of each to a hundred pickles. Use only cider vinegar. In each gallon dissolve two ounces of powdered alum, and pour this cold over the pickles, filling the jar or bottle, which must be kept tightly covered. Some persons heat the vinegar and pour it boiling hot upon the cucumbers, but there is no necessity for it. It is well to keep most of the pickles in salt (the juice which exudes from them making sufficient brine to keep from drying,) and to freshen them a gallon at a time; they may be kept unchanged two or three years in the salt. Those that you wish to freshen place in a deep crockery dish, and pour over cold water enough to cover them. Let this stand one day and one night; then turn it off and pour more cold water upon them, and so continue, renewing the water each day, till they are none too salt; four or five days will accomplish this.

Small onions, skinned, hard-boiled eggs divested of their shells, and sweet apples, pared and cored, need only the spice and vinegar; they will be pickled in a week. Peppers, radish-pods, barberries, cranberries, and nasturtium seeds need no spice; only cover them with the vinegar. A week will pickle these also.

Tomatoes are best pickled in small slices in the following manner: A gallon of small tomatoes cut in slices one-eighth of an inch in thickness, and two quarts of small onions sliced the same. Put them in a deep dish, in layers, sprinkling each layer plentifully with fine salt. Let them stand over night. In the morning turn off the brine which the juice of the tomatoes and onions has made, and mix among the slices an ounce each of whole cloves, allspice, pepper, and white mustard seed; and a coffee-cupful of horse radish root cut into thin slices the size of dice. Then put this all into bottles and fill up with cold vinegar. Cork the bottles tightly. This pickle will be ready for the table in one week, and the older it is the better it will be. It will keep years in a cold, dark cellar.

Small melons after their seeds are removed make hard and crisp pickles. Cut them in halves, lengthwise, and scrape out the seeds with a wooden spoon. Then salt them like cucumbers. After that sew them with a needle and coarse thread together—into their natural form,—leaving a small aperture at one end, by which they must be filled with sliced onion flavored by thrusting in with it a few cloves, peppercorns and mustard seed. Then sew up this aperture also. Cover these melons with vinegar—they will need it applied scalding hot—in stone jars.

Cabbages—the purple are considered most suitable—should be cut in quarter inch slices, after the outer thin leaves are taken off and the whole head carefully searched for insects, and placed in

crockery dishes with fine salt sprinkled over them for one night. In the morning take them from the dishes and pack them in a large stone jar, and pour over them scalding vinegar enough to cover them, in which has been placed cloves, allspice, and peppercorns—an ounce each to a gallon of vinegar. Both these and the melons must be left with the jars uncovered till the vinegar is cool; then they should be closed and the jars set in a cool place.

If a white cap, or a thin coating, or specks of mould appear on pickles, or in the vinegar, it is because the vinegar is not strong enough, and it must be turned off and better procured. If pickles grow soft stir into the vinegar a little powdered alum.

A sweet pickle may be made of quinces, peaches, or beets. Beets need only to be boiled as for dinner, peeled and sliced and covered with cold vinegar in a jar. They are ready for the table in two days. Quinces must be pared, quartered, and cored. Take half a peck. Boil five pounds of sugar in two quarts of vinegar five minutes, and skim it well. Then add one ounce of stick cinnamon and half an ounce of cloves and the quince. Boil the whole till the quince is soft; then place it in jars, cover them, and keep in a cool closet. Remove the stones from the peaches. Scald four cupfuls of sugar in two quarts of vinegar, and skim it. Stick three or four cloves into the peaches and lay them in a jar. Pour the hot vinegar and sugar over them, and cover and keep them as you do the quinces. At the end of a week drain off the vinegar, heat it, and skim it again, and again pour it over the peaches. They will then keep through the winter.

If fruit cannot be kept in a palatable condition without cooking it is very well to stew it plainly, in just water enough to extract its juices easily; and, as this operation always increases its acidity, there is no objection to the addition of a small quantity of sugar scalded with it. *Preserved* in this way it may be eaten in moderate quantities without harm. But the preserve *par eminence*, the concentrated sweetmeats, which are the crowning glory of all the cook's efforts at keeping and cooking fruit, are so expensive and so unhealthy that all prudent women ought to set their faces against them. But many housewives will fight valiantly for them, and forego many other harmless indulgences for the sake of concocting their favorite jellies and jams. So, lest more time and strength and money should be squandered in making them than is absolutely necessary, I give a few of the best rules for their manufacture, before passing on to speak more particularly of the care of vegetables.

Use none but good, sound fruit, and nice, white sugar—the granulated. For preserves proper—those in which the fruit is kept distinct from the syrup—a pound of sugar is needed for each pound of fruit. For jellies, a pound of sugar for each pint of syrup. For jam and marmalade the proportion varies—according to the consistence of the pulp—from half to three-quarters, or even a whole pound of sugar to one of fruit.

Make preserves in a porcelain-lined kettle,—be sure that it is perfectly clean. Pare, quarter, and core apples and quinces. Do the same for large pears; but only pare small ones, leaving the stem on. Pare melon rinds. Skim tomatoes and peaches by scalding and then rubbing or peeling. Remove the whole of orange and lemon rinds, cut them in slices and take out the seeds. Prick plums with a fine needle to prevent the skin from bursting; and grapes, cranberries, and crab-apples also, if desired to retain their whole form. Berries and cherries need only washing and careful searching for insects.

Observe directions in regard to pared fruit given in the early part of this chapter, then, when your materials are ready, weigh the fruit and place it in the kettle with enough cold water to reach the topmost pieces. Keep a slow, steady fire. Let the kettle boil gently—scarcely above a simmer—till you can penetrate the fruit with a straw. Meantime have the proportion of sugar weighed, and then skim out the fruit and drain it in a hair sieve. Wash the kettle and return the syrup, to which add the sugar and whatever materials you wish to use for flavoring. Let it boil gently till the syrup is clear,—skim off all impurities that rise to the surface. Then drop in the fruit, using great care lest it break. Boil it slowly fifteen minutes; then remove the kettle, skim the fruit into jars that have been gradually heated, pour in the syrup. When cool, put on the lid, or cork tightly, and keep them in a cool, dry closet.

Use only stone, or glass jars. Glass is preferable, because if mould forms, or fermentation threatens, it can be easily seen. A thick coat of mould at the top will do no harm, but if small specks, or bubbles, are seen among the fruit, the specks must be taken out, both fruit and syrup scalded and the jar washed clean before they are returned. It is well to look at preserves as often as once a month to see if they need scalding. Pears alone, or mingled with peaches and apples, are considered nice; or with quinces. Peaches and apples do well together. Quinces and sweet apples mix very well; so do barberries and sweet apples. None of these need flavoring; neither do cranberries, gooseberries, strawberries, blackberries, grapes, or raspberries. Blueberries need stick cinnamon boiled in the syrup. Crab apples need ginger. Plums require no flavoring, neither do cherries. Tomatoes are improved with sliced lemon or orange scalded with them.

To make jam, boil the fruit,—which, if large, should be cut as small as berries—in as little water as possible, till it can be mashed with a spoon. Then put with it the sugar and boil it half an hour, stirring it frequently. This applies more particularly to apples, pears, quinces, and

peaches,—which may be mingled, as for whole preserves. Tomatoes made into jam must be skinned, the seeds taken out, and then boiled with a pound of sugar for every pound of pulp and two sliced lemons used for flavoring. Three-quarters of an hour will cook it. Strawberries require but half their weight in sugar for jam. Boil the berries half an hour, stir them almost constantly; at the end of that time stir in the sugar and boil it another half hour. Raspberries and blackberries for jam must have their weight of sugar. The fruit must be bruised, and then boiled till the juice is nearly gone. Add the sugar then, and boil slowly twenty minutes. Grapes for jam must be boiled, strained through a hair sieve, mixed with sugar—pound for pound—boiled and stirred twenty minutes. Marmalade only differs from jam in being of greater solidity, attained by using more gelatinous fruit than for jam, and more sugar, with longer time and more moderate boiling.

To make fruit jellies, only the juice, or the water in which the fruit is boiled, is needed with the sugar. Currant and blackberry jelly may be made by wringing the berries in a cloth and mixing an equal weight of sugar with it, which should be finely pulverized. Stir it till the sugar is all dissolved. Pour it into glasses, and set the glasses in a sunny window for two or three days. Then cover them with white paper pasted over the brim of the glasses. Cranberries for jelly must be boiled in as little water as possible till soft; then three-quarters their weight of sugar stirred in, and the whole boiled five or ten minutes longer, when it will be found ready to put into glasses. To know when jelly is boiled enough drop a spoonful into cold water. If it sinks immediately it is done; if not, it must be boiled longer. Crab-apples boiled till soft with a bag of ginger make nice jelly. Quinces and plums must also be boiled till tender. Grapes and barberries do not need boiling to express their juice. Rhubarb should be scalded a few minutes only. All of these fruits should be put (those that are boiled accompanied by their syrup) into a flannel bag (wet this before using it) and squeezed gently till all the juice is obtained. Then to a pint of this juice add a pound of sugar, and boil it till it will sink in water. Pour it into glass jars; when cool paste clean papers over the brims and set them in a dark, cool place. It should have been mentioned in the first part of this chapter that uncooked cranberries can be kept any length of time in cold water, in covered jars, if the vessel is placed where they will be cold—just cold enough to escape freezing.

For the New England Farmer.

Scotland Cake.

Two cups sugar; scant cup of butter beaten to a froth. Three eggs well beaten; three cups flour; one cup milk; one teaspoonful saleratus dissolved in the milk; two teaspoonfuls cream of tartar rubbed in the flour. Flavor with lemon or vanilla.

Indian Pudding.

Boil one quart of milk, and pour to nine great spoonfuls of Indian meal. Add a large cup of molasses, and a small teaspoonful of salt. When the lumps are all mashed, add one quart of cold milk. Bake three or four hours at least in a moderate oven. To be eaten with butter or salted cream.

Corn Cakes, or Mock Oyster.

Cut from the cob twelve good sized ears of full sweet corn. Add one half pint of sweet milk, and two eggs. Beat well together. Salt to taste. Add sufficient flour to make a thin batter. Fry in pork fat.

Chow-chow.

Two quarts of green tomatoes. Two quarts of white onions, one dozen green peppers, one dozen green cucumbers, one large head of cabbage, chop fine. Season with mustard and celery seed, to suit the taste. Cover with the best cider vinegar. Boil two hours slowly, continually stirring. As soon as you take it from the stove, add two table spoonfuls of salad oil. Cover tight and keep in a cool place.

I think that after one faithful trial of the above receipts, the lady readers of the FARMER will feel that they have some valuable acquisitions to their store of receipts. M. P. B.

Somerset, Aug. 6th, 1869.